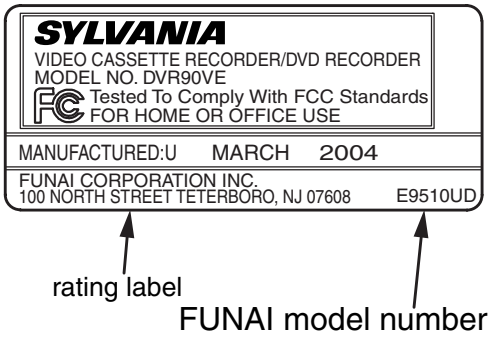
SUPPLEMENT

SYLVANIA

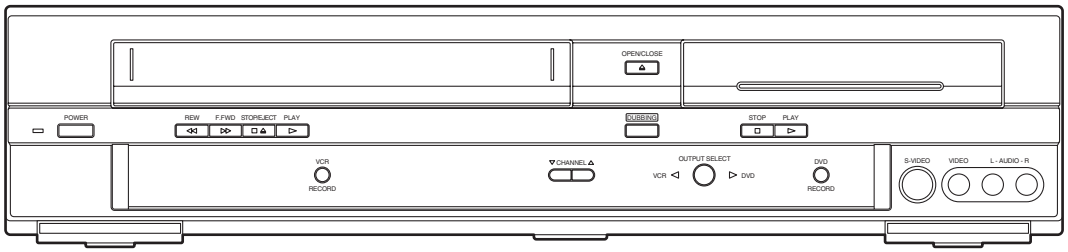
SERVICE MANUAL

This service manual supplement is for the DVR90VE W1.5 Version model, which are different from previous DVR90VE model.
For DVR90VE W1.5 Version model, FUNAI model number (E9510UD) is printed on rating label in the rear. Refer to the rating label illustration at right.
This service manual shows only the differences between the model DVR90VE W1.5 Version and the original model EWR20V4 W1.5 Version.
All other information is described in the service manual of the model EWR20V4 W1.5 Version.



DVD RECORDER & VIDEO CASSETTE RECORDER

DVR90VE



VHS

IMPORTANT SAFETY NOTICE

Proper service and repair is important to the safe, reliable operation of all Funai Equipment. The service procedures recommended by Funai and described in this service manual are effective methods of performing service operations. Some of these service special tools should be used when and as recommended.

It is important to note that this service manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It also is important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. Funai could not possibly know, evaluate and advice the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, Funai has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by Funai must first use all precautions thoroughly so that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

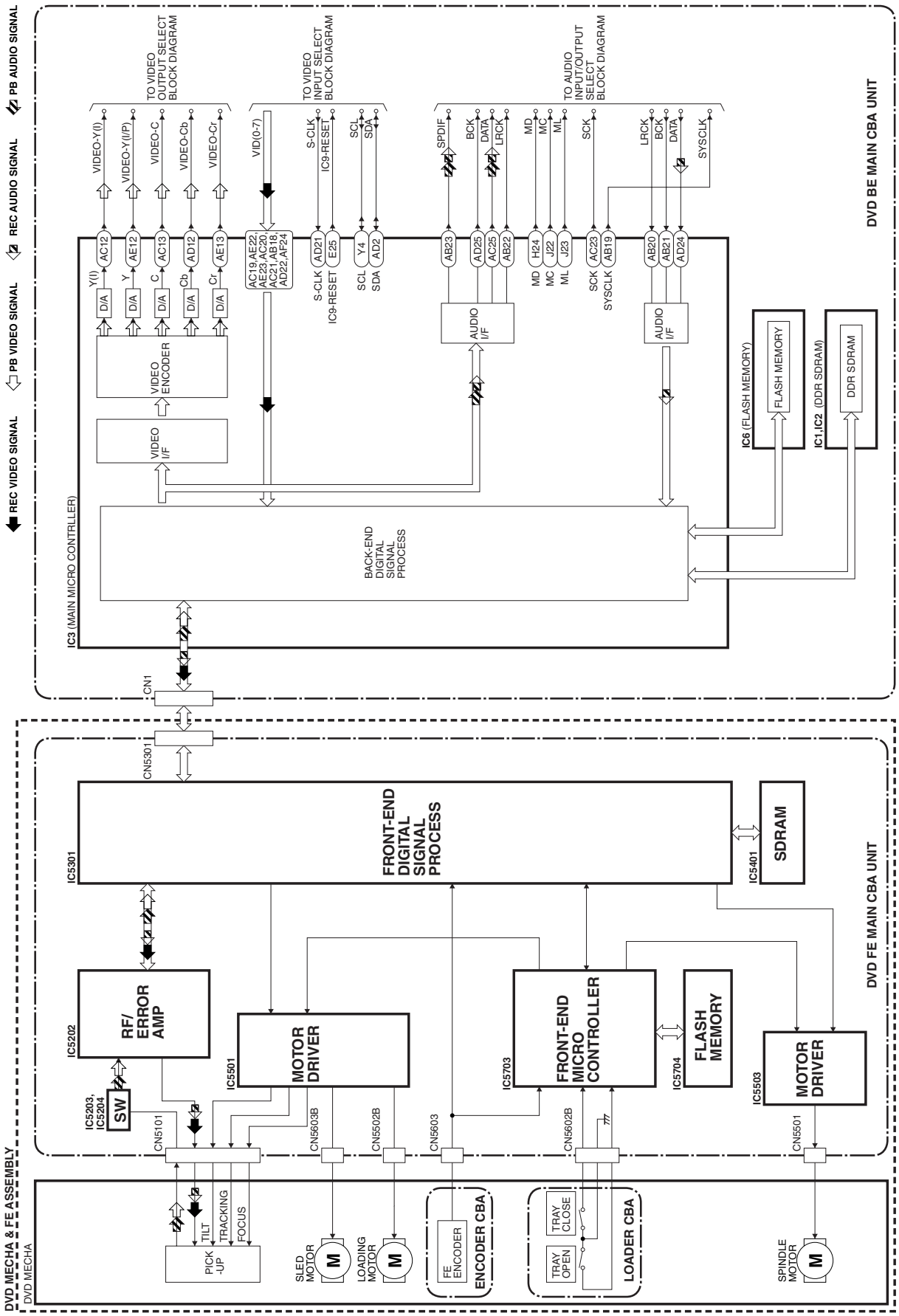
TABLE OF CONTENTS

Block Diagrams 1-1-1
Schematic Diagrams / CBA's and Test Points 1-2-1
Wiring Diagram < VCR Section > 1-3-1
Wiring Diagram < DVD Section > 1-3-2
Different parts from original model (EWR20V4 W1.5 Version) 1-4-1

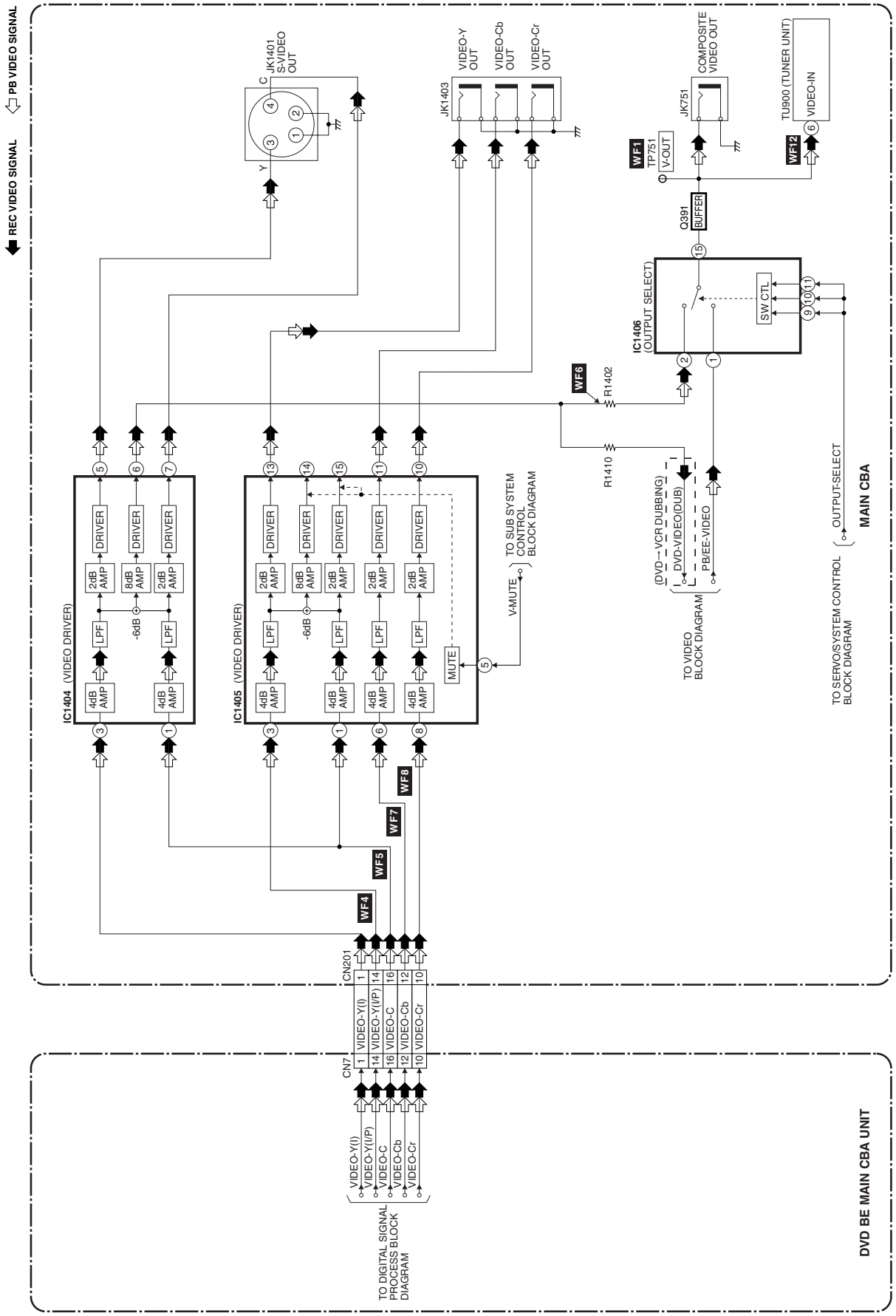
Manufactured under license from Dolby Laboratories. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories.

BLOCK DIAGRAMS

Digital Signal Process Block Diagram



Video Output Select Block Diagram



SCHEMATIC DIAGRAMS / CBA'S AND TEST POINTS

Standard Notes

WARNING

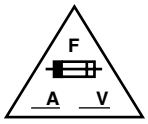
Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the mark " ⚠ " in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

Notes:

1. Do not use the part number shown on these drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since these drawings were prepared.
2. All resistance values are indicated in ohms ($K=10^3$, $M=10^6$).
3. Resistor wattages are 1/4W or 1/6W unless otherwise specified.
4. All capacitance values are indicated in μF ($P=10^{-6}$ μF).
5. All voltages are DC voltages unless otherwise specified.

LIST OF CAUTION, NOTES, AND SYMBOLS USED IN THE SCHEMATIC DIAGRAMS ON THE FOLLOWING PAGES:

1. CAUTION:



FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQES D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.

This symbol means fast operating fuse.
Ce symbole reprèsente un fusible à fusion rapide.

2. CAUTION:

Fixed Voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

3. Note:

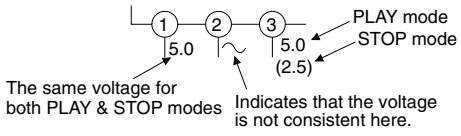
(1) Do not use the part number shown on the drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since the drawings were prepared.

(2) To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

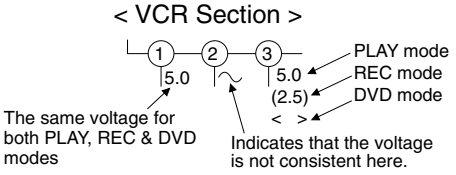
4. Mode: SP/REC

5. Voltage indications for PLAY and REC modes on the schematics are as shown below:

< DVD Section >



< VCR Section >



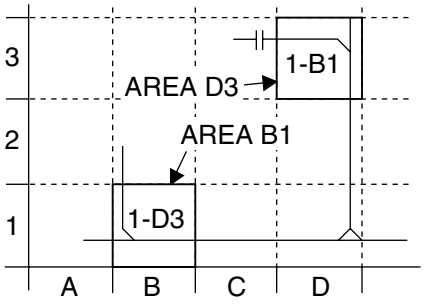
Unit: Volts

6. How to read converged lines

1-D3
Distinction Area
Line Number
(1 to 3 digits)

Examples:

1. "1-D3" means that line number "1" goes to area "D3".
2. "1-B1" means that line number "1" goes to area "B1".



7. Test Point Information

: Indicates a test point with a jumper wire across a hole in the PCB.

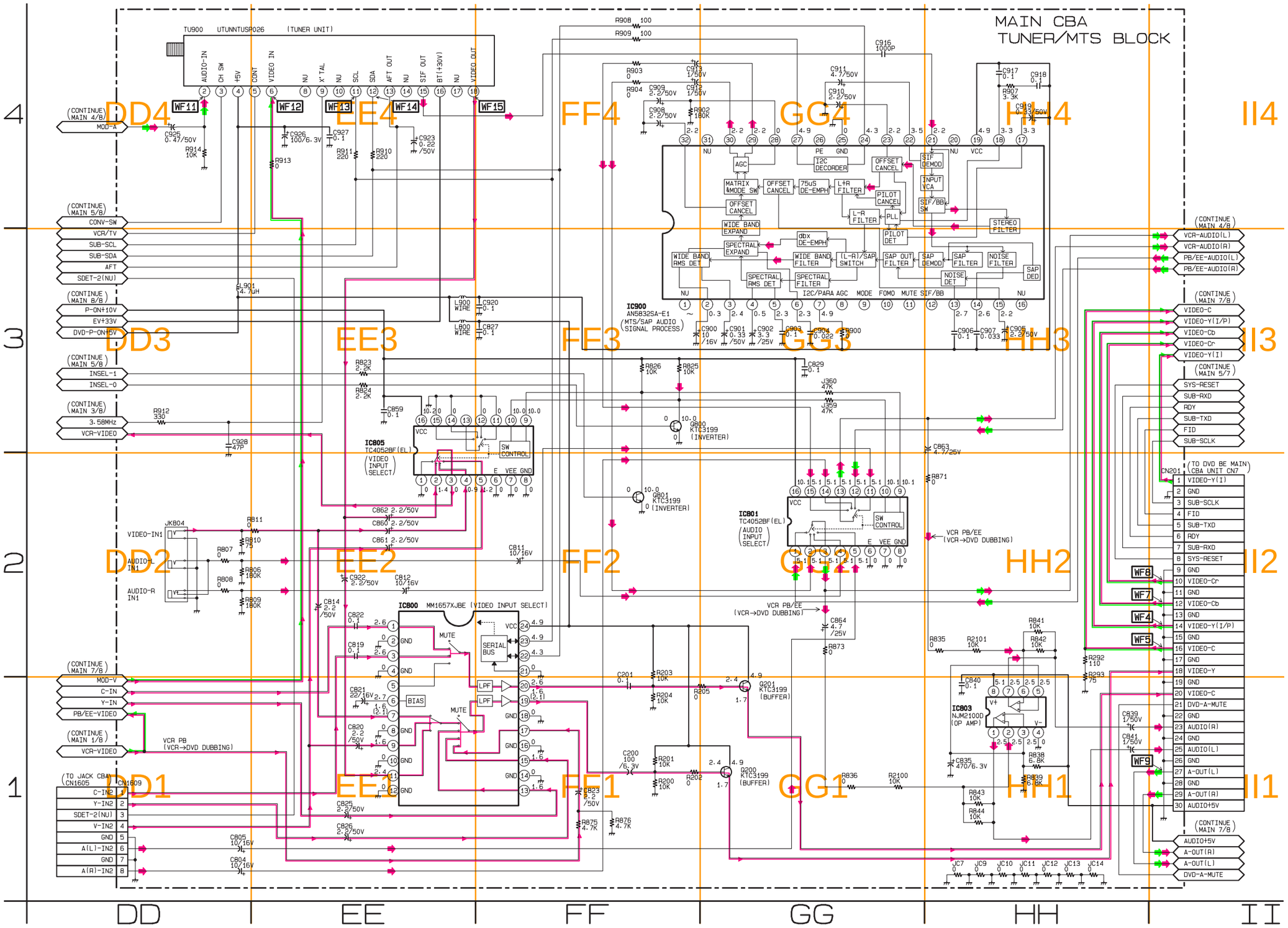
: Used to indicate a test point with a component lead on foil side.

: Used to indicate a test point with no test pin.

: Used to indicate a test point with a test pin.

Main 6/8 Schematic Diagram < VCR Section >

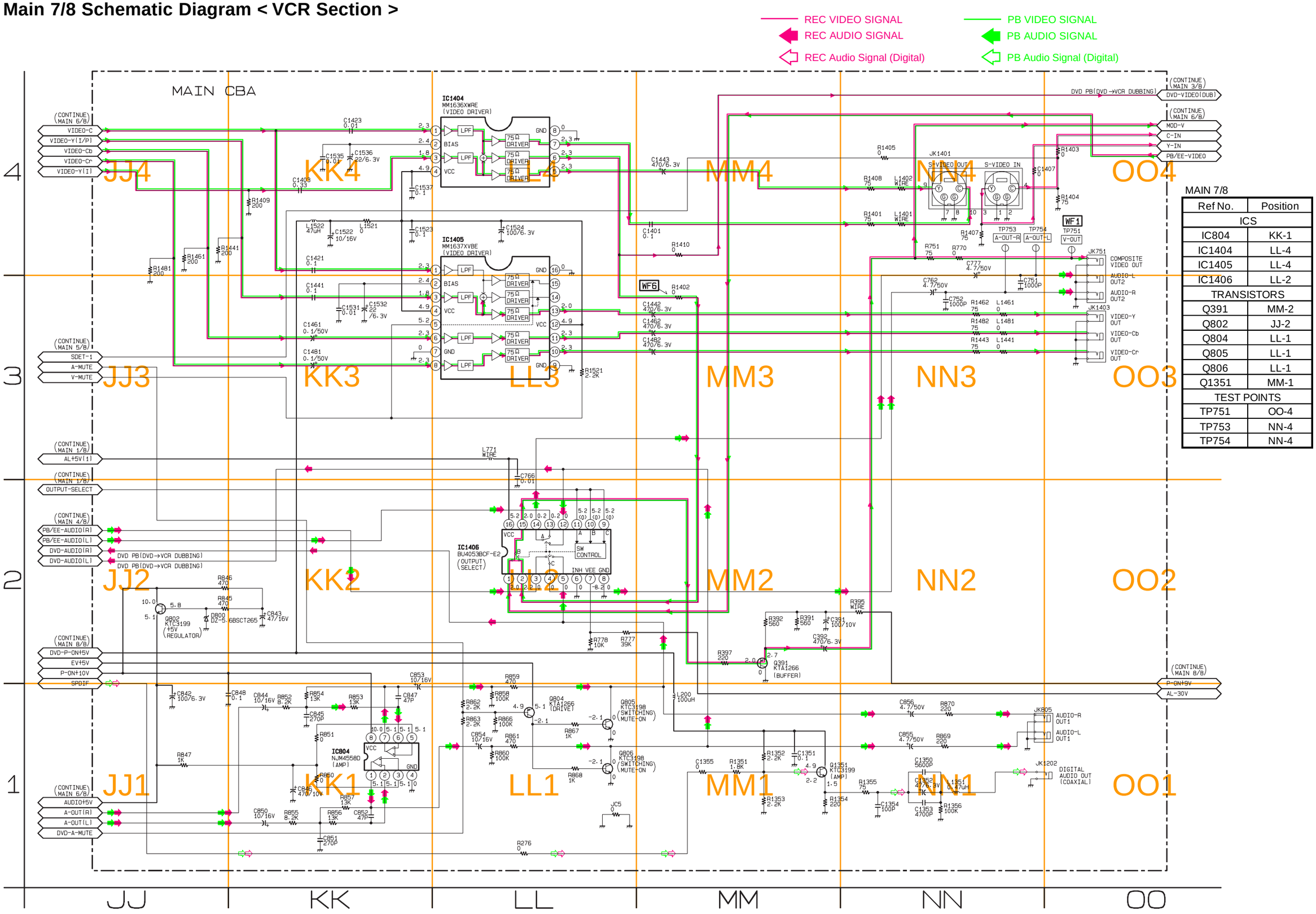
REC VIDEO SIGNAL
REC AUDIO SIGNAL
PB VIDEO SIGNAL
PB AUDIO SIGNAL



MAIN 6/8

Ref No.	Position
ICS	
IC800	EE-2
IC801	GG-2
IC803	HH-1
IC805	EE-3
IC900	FF-3
TRANSISTORS	
Q200	GG-1
Q201	GG-1
Q800	FF-3
Q801	FF-2
CONNECTORS	
CN201	II-2
CN1609	DD-1

Main 7/8 Schematic Diagram < VCR Section >



MAIN 7/8

Ref No.	Position
ICS	
IC804	KK-1
IC1404	LL-4
IC1405	LL-4
IC1406	LL-2
TRANSISTORS	
Q391	MM-2
Q802	JJ-2
Q804	LL-1
Q805	LL-1
Q806	LL-1
Q1351	MM-1
TEST POINTS	
TP751	OO-4
TP753	NN-4
TP754	NN-4

DVD BE Main 1/4 Schematic Diagram < DVD Section >

Note:

1. The order of pins shown are different from that of IC3 itself.
2. IC3 is shown as IC3(1/6) through IC3(6/6) in DVD BE Main Schematic Diagram section.

REC Video+Audio Signal (Digital)
REC Video Signal (Digital)
REC Video Signal
REC Audio Signal (Digital)
REC Audio Signal
PB Video+Audio Signal (Digital)
PB Video Signal (Digital)
PB Video Signal
PB Audio Signal (Digital)
PB Audio Signal

DVD BE MAIN 1/4

Ref No.	Position
ICS	
IC3(1/6)	D-3
IC9	B-4
IC12	B-2
IC13	D-1
IC17	C-4
TRANSISTORS	
Q16	D-4
Q17	D-4
Q18	E-4
Q19	B-4
Q20	A-4
Q21	E-2
CONNECTOR	
CN7	F-4

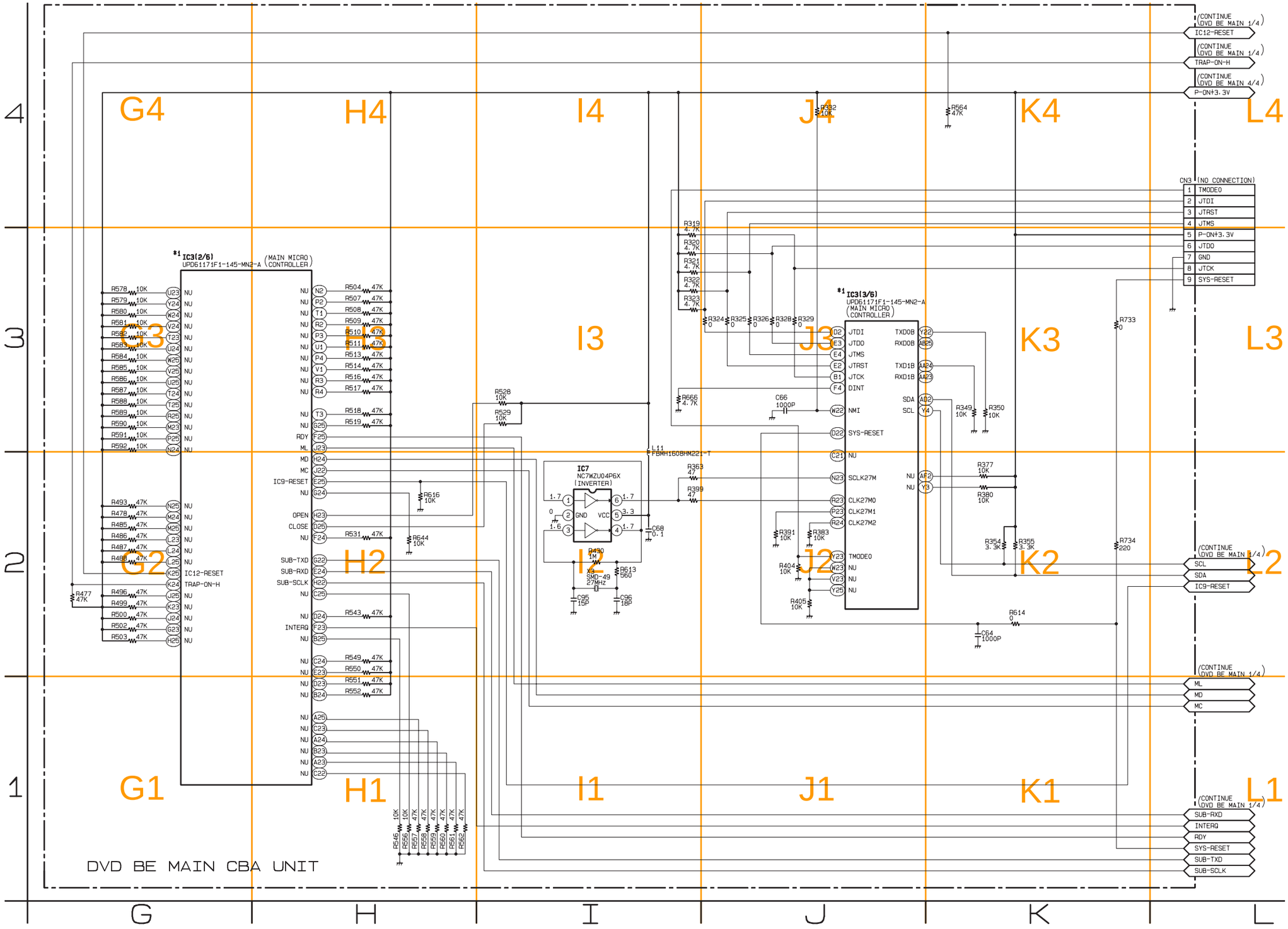
DVD BE Main 2/4 Schematic Diagram < DVD Section >

Note:

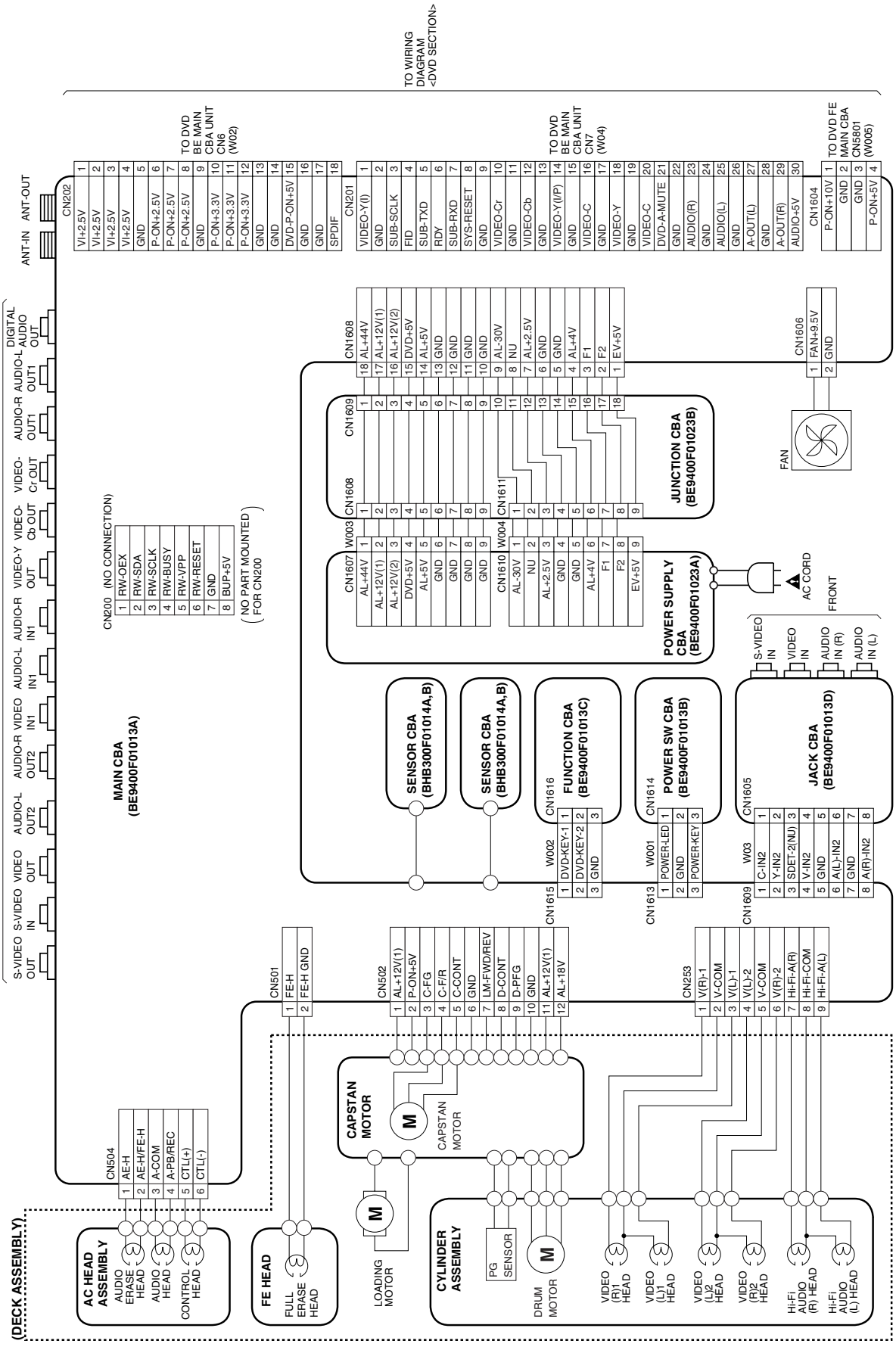
1. The order of pins shown are different from that of IC3 itself.
2. IC3 is shown as IC3(1/6) through IC3(6/6) in DVD BE Main Schematic Diagram section.

DVD BE MAIN 2/4

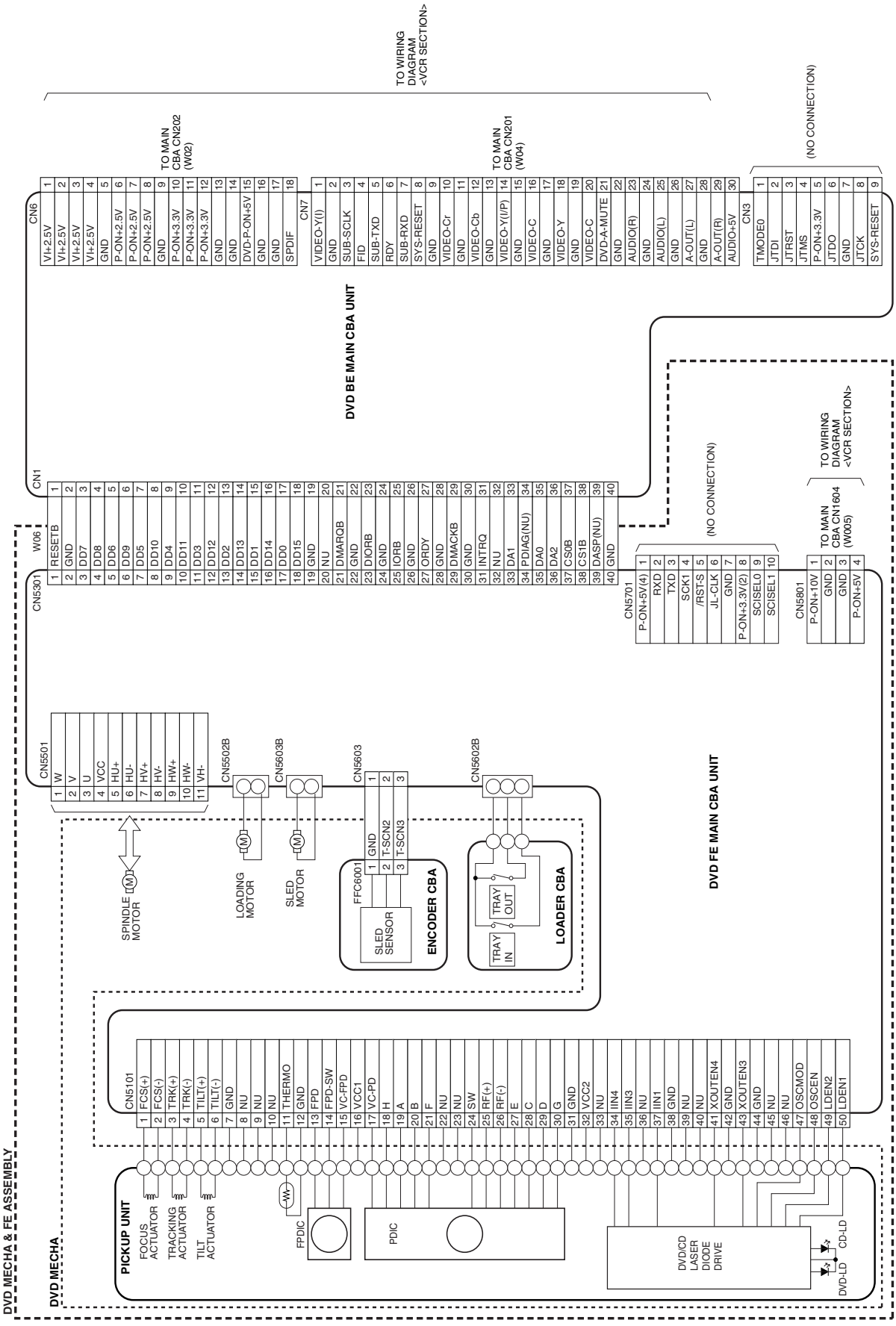
Ref No.	Position
ICS	
IC3(2/6)	G-3
IC3(3/6)	J-3
IC7	I-2
CONNECTOR	
CN3	L-4



WIRING DIAGRAM < VCR SECTION >



WIRING DIAGRAM < DVD SECTION >



Different parts from original model (EWR20V4 W1.5 Version)

Ref. No.	Description	Part No.
MECHANICAL PARTS		
A1X	FRONT ASSEMBLY E9410UD	0VM204564E
A10⚠	LABEL, RATING(U) E9510UD or	----------
⚠	LABEL, RATING(D) E9510UD	----------
A14	LABEL, BAR CODE HB400UD or	----------
	BAR CODE LABEL E9510UD	----------
A34	FOOT H5100UD	0VM406940
S1	GIFT BOX CARTON E9510UD	0VM306790A
X20⚠	OWNER'S MANUAL E9510UD	0VMN04183A
ELECTRICAL PARTS		
	DVD BE MAIN CBA UNIT	N7CF4AUP
	MCV CBA	1VSA10778
	MAIN CBA (MCV-A)	----------
C1403	CHIP CERAMIC CAP.(1608) B K 0.33µF/10V	CHD1AK30B334
C1423	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1443	ELECTROLYTIC CAP. 470µF/6.3V M or	CE0KMASDL471
	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASTL471
C1535	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1536	ELECTROLYTIC CAP. 22µF/6.3V M H7	CE0KMAVSL220
C1537	CHIP CERAMIC CAP.(1608) F Z 0.1µF/25V	CHD1EZ30F104
CN201	FMN CONNECTOR, TOP 30P 30FMN-BTRK	JCFNG30JG002
IC1404	DRIVER FOR DVD MM1636XWRE	QSZBA0TMM108
W01	Not Used	
W04	FFC CABLE 30P FFC/P1.00/170	WX1E9400-014

DVR90VE
E9510UD
2004-10-04

Emerson®

SERVICE MANUAL

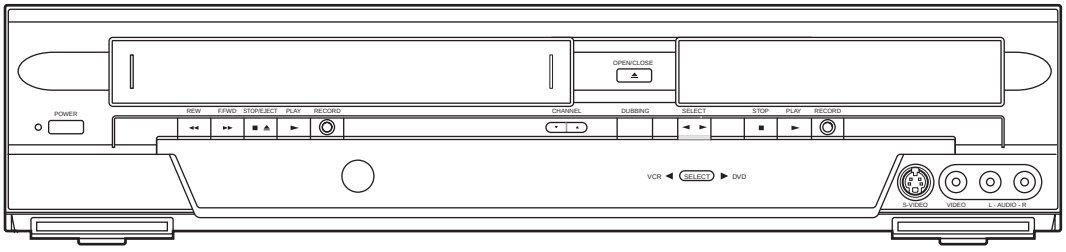
Main Section
- **Specifications**
- **Preparation for Servicing**
- **Adjustment Procedures**
- **Schematic Diagrams**
- **CBA's**
- **Exploded Views**
- **Parts List**

When servicing the deck mechanism, refer to MK12.5 Deck Mechanism Section.

Deck Mechanism Part No.: N2260FL

DVD RECORDER & VIDEO CASSETTE RECORDER

EWR20V4



VHS

IMPORTANT SAFETY NOTICE

Proper service and repair is important to the safe, reliable operation of all Funai Equipment. The service procedures recommended by Funai and described in this service manual are effective methods of performing service operations. Some of these service special tools should be used when and as recommended.

It is important to note that this service manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It also is important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. Funai could not possibly know, evaluate and advice the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, Funai has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by Funai must first use all precautions thoroughly so that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

Manufactured under license from Dolby Laboratories. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories.

MAIN SECTION

DVD RECORDER & VIDEO CASSETTE RECORDER

EWR20V4

Main Section

- **Specifications**
- **Preparation for Servicing**
- **Adjustment Procedures**
- **Schematic Diagrams**
- **CBA's**
- **Exploded Views**
- **Parts List**

TABLE OF CONTENTS

Specifications 1-1-1
Laser Beam Safety Precautions 1-2-1
Important Safety Precautions 1-3-1
Standard Notes for Servicing 1-4-1
Preparation for Servicing 1-5-1
Operating Controls and Functions 1-6-1
Cabinet Disassembly Instructions 1-7-1
How to Initialize the DVD Recorder 1-7-7
Electrical Adjustment Instructions 1-8-1
Firmware Renewal Mode 1-9-1
Block Diagrams 1-10-1
Function Indicator Symbols 1-10-11
Schematic Diagrams / CBA's and Test Points 1-11-1
Waveforms 1-12-1
Wiring Diagram < VCR Section > 1-13-1
Wiring Diagram < DVD Section > 1-13-2
System Control Timing Charts 1-14-1
IC Pin Function Descriptions 1-15-1
Lead Identifications 1-16-1
Exploded Views 1-17-1
Mechanical Parts List 1-18-1
Electrical Parts List 1-19-1

SPECIFICATIONS

< VCR Section >

Description	Unit	Minimum	Nominal	Maximum	Remark
1. Video					
1-1. Video Output (PB)	Vp-p	0.8	1.0	1.2	SP Mode
1-2. Video Output (R/P)	Vp-p	0.8	1.0	1.2	
1-3. Video S/N Y (R/P)	dB	40	45		SP Mode, W/O Burst
1-4. Video Color S/N AM (R/P)	dB	37	41		SP Mode
1-5. Video Color S/N PM (R/P)	dB	30	36		SP Mode
1-6. Resolution (PB)	Line	230	245		SP Mode
2. Servo					
2-1. Jitter Low	µsec		0.07	0.12	SP Mode
2-2. Wow & Flutter	%		0.3	0.5	SP Mode
3. Normal Audio					
3-1. Output (PB)	dBV	-9	-6	-3	SP Mode
3-2. Output (R/P)	dBV	-9	-6	-1.5	SP Mode
3-3. S/N (R/P)	dB	36	41		SP Mode
3-4. Distortion (R/P)	%		1.0	4.0	SP Mode
3-5. Freq. resp (R/P) at 200Hz	dB	-11	-4		SP Mode
(-20dB ref. 1kHz) at 8kHz	dB	-14	-4		SP Mode
4. Tuner					
4-1. Video output	Vp-p	0.8	1.0	1.2	E-E Mode
4-2. Video S/N	dB	39	42		E-E Mode
4-3. Audio output	dB	-10	-6	-2	E-E Mode
4-4. Audio S/N	dB	40	46		E-E Mode
5. Hi-Fi Audio					
5-1. Output	dBV	-12	-8	-4	SP Mode
5-2. Dynamic Range	dB	70	85		SP Mode
5-3. Freq. resp (6dB B.W)	Hz		20 ~ 20K		SP Mode

Note: Nominal specs represent the design specs. All units should be able to approximate these – some will exceed and some may drop slightly below these specs. Limit specs represent the absolute worst condition that still might be considered acceptable; In no case should a unit fail to meet limit specs.

< DVD Section >

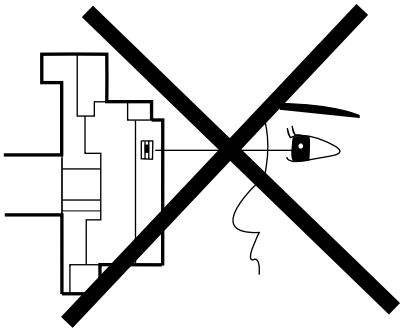
ITEM	CONDITIONS	UNIT	NOMINAL	LIMIT
1. VIDEO				
1-1. Video Output	75 ohm load	Vp-p	1.0	
1-2. S-Video Output				
Y (Luminance)	75 ohm load	Vp-p	1.0	
C (Chrominance)	75 ohm load	Vp-p	0.286	
1-3. Component Output				
Y (Luminance)	75 ohm load	Vp-p	1.0	
Cb (Chrominance)	75 ohm load	Vp-p	0.7	
Cr (Chrominance)	75 ohm load	Vp-p	0.7	
2. AUDIO				
2-1. Output Level		Vrms	2.0	
2-2. Frequency Response				
DVD-VIDEO LPCM	fs = 48kHz 20~22kHz	dB	± 0.5	
Audio CD	fs = 44.1kHz 20~20 kHz	dB	± 0.5	
2-3. Signal/Noise Ratio				
DVD-VIDEO LPCM		dB	90	
CD		dB	90	
REC & Playback	Input: 2 Vrms, Rec Speed: XP	dB	80	
2-4. Dynamic Range				
DVD-VIDEO LPCM		dB	80	
CD		dB	80	
REC & Playback	Input: 2 Vrms, Rec Speed: XP	dB	80	
2-5. THD+N	1 kHz, 0 dB			
DVD-VIDEO LPCM		%	0.01	
CD		%	0.01	
REC & Playback	Input: 2 Vrms, Rec Speed: XP	%	0.01	

NOTES:

1. All Items are measured without pre-emphasis unless otherwise specified.
2. Power supply : AC120 V 60 Hz
3. Load imp. : 100 k ohm
4. Ambient temperature : 5 °C ~ 40 °C

LASER BEAM SAFETY PRECAUTIONS

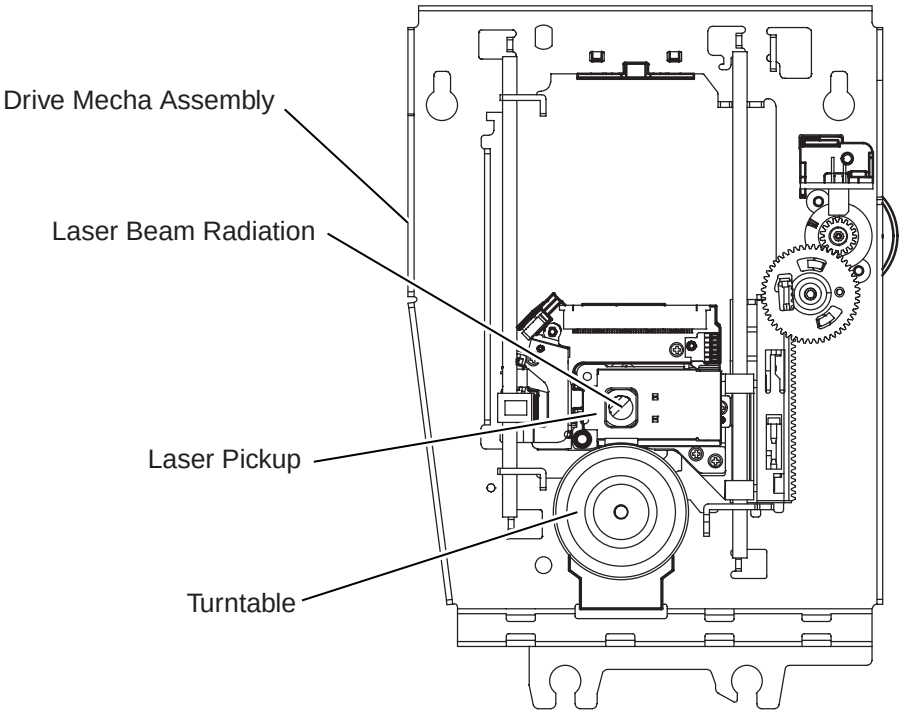
This DVD player uses a pickup that emits a laser beam.



Do not look directly at the laser beam coming from the pickup or allow it to strike against your skin.

The laser beam is emitted from the location shown in the figure. When checking the laser diode, be sure to keep your eyes at least 30cm away from the pickup lens when the diode is turned on. Do not look directly at the laser beam.

Caution: Use of controls and adjustments, or doing procedures other than those specified herein, may result in hazardous radiation exposure.



DANGER	- VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM.
CAUTION	- VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.
ATTENTION	- RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE EXPOSITION DANGEREUSE AU FAISCEAU.
注意	- ここを開くと可視及び不可視のレーザー光が出ます。ビームを直接見たり、触れたりしないでください。

Location: Inside Top of DVD mechanism.

IMPORTANT SAFETY PRECAUTIONS

Product Safety Notice

Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by a ⚠ on schematics and in parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire, and/or other hazards. The Product's Safety is under review continuously and new instructions are issued whenever appropriate. Prior to shipment from the factory, our products are carefully inspected to confirm with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced**.**

Precautions during Servicing

A. Parts identified by the ⚠ symbol are critical for safety. Replace only with part number specified.

B. In addition to safety, other parts and assemblies are specified for conformance with regulations applying to spurious radiation. These must also be replaced only with specified replacements.
Examples: RF converters, RF cables, noise blocking capacitors, and noise blocking filters, etc.

C. Use specified internal wiring. Note especially:

1)Wires covered with PVC tubing

2)Double insulated wires

3)High voltage leads

D. Use specified insulating materials for hazardous live parts. Note especially:

1)Insulation tape

2)PVC tubing

3)Spacers

4)Insulators for transistors

E. When replacing AC primary side components (transformers, power cord, etc.), wrap ends of wires securely about the terminals before soldering.

F. Observe that the wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).

G. Check that replaced wires do not contact sharp edges or pointed parts.

H. When a power cord has been replaced, check that 5 - 6 kg of force in any direction will not loosen it.

I. Also check areas surrounding repaired locations.

J. Be careful that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

K. Crimp type wire connector
The power transformer uses crimp type connectors which connect the power cord and the primary side of the transformer. When replacing the transformer, follow these steps carefully and precisely to prevent shock hazards.
Replacement procedure

1)Remove the old connector by cutting the wires at a point close to the connector.

Important: Do not re-use a connector. (Discard it.)

2)Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

3)Align the lengths of the wires to be connected. Insert the wires fully into the connector.

4)Use a crimping tool to crimp the metal sleeve at its center. Be sure to crimp fully to the complete closure of the tool.

L. When connecting or disconnecting the internal connectors, first, disconnect the AC plug from the AC outlet.

Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts, and wires have been returned to their original positions. Afterwards, do the following tests and confirm the specified values to verify compliance with safety standards.

1. Clearance Distance

When replacing primary circuit components, confirm specified clearance distance (d) and (d') between soldered terminals, and between terminals and surrounding metallic parts. (See Fig. 1)

Table 1: Ratings for selected area

AC Line Voltage	Clearance Distance (d), (d')
120 V	≥ 3.2mm (0.126 inches)

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

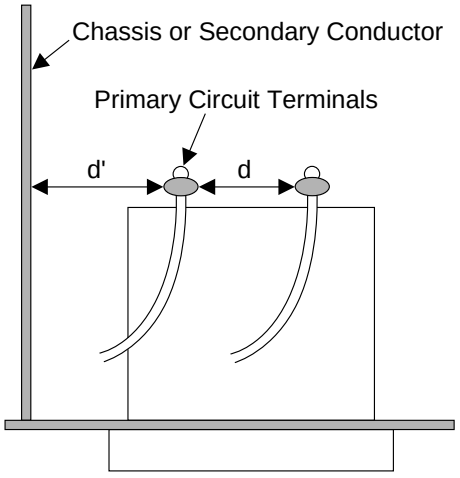


Fig. 1

2. Leakage Current Test

Confirm the specified (or lower) leakage current between B (earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.) is lower than or equal to the specified value in the table below.

Measuring Method (Power ON) :

Insert load Z between B (earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across the terminals of load Z. See Fig. 2 and the following table.

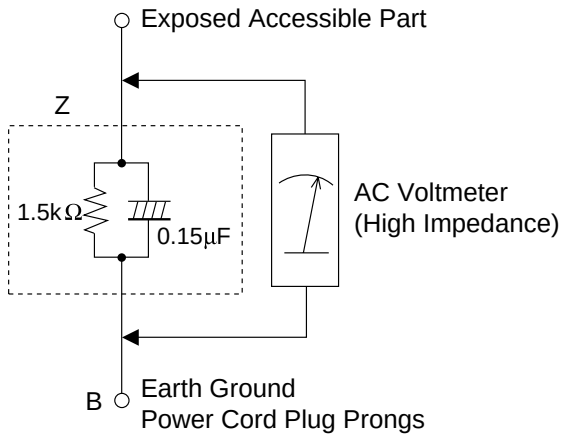


Fig. 2

Table 2: Leakage current ratings for selected areas

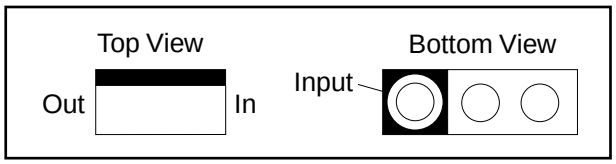
AC Line Voltage	Load Z	Leakage Current (i)	Earth Ground (B) to:
120 V	0.15μF CAP. & 1.5kΩ RES. Connected in parallel	i≤0.5mA Peak	Exposed accessible parts

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

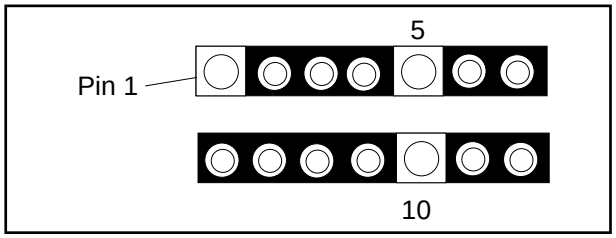
STANDARD NOTES FOR SERVICING

Circuit Board Indications

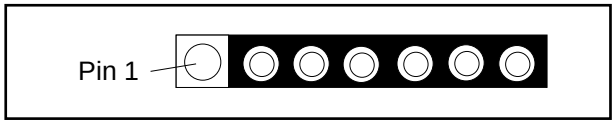
1. The output pin of the 3 pin Regulator ICs is indicated as shown.



2. For other ICs, pin 1 and every fifth pin are indicated as shown.

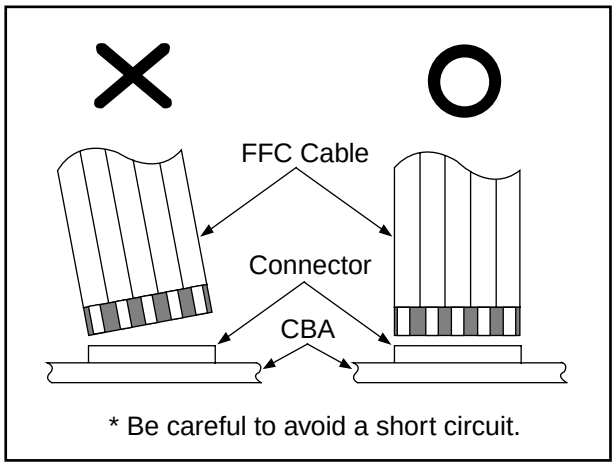


3. The 1st pin of every male connector is indicated as shown.



Instructions for Connectors

1. When you connect or disconnect the FFC (Flexible Foil Connector) cable, be sure to first disconnect the AC cord.
2. FFC (Flexible Foil Connector) cable should be inserted parallel into the connector, not at an angle.



Pb (Lead) Free Solder

When soldering, be sure to use the Pb free solder.

How to Remove / Install Flat Pack-IC

1. Removal

With Hot-Air Flat Pack-IC Desoldering Machine:.

(1) Prepare the hot-air flat pack-IC desoldering machine, then apply hot air to the Flat Pack-IC (about 5 to 6 seconds). (Fig. S-1-1)

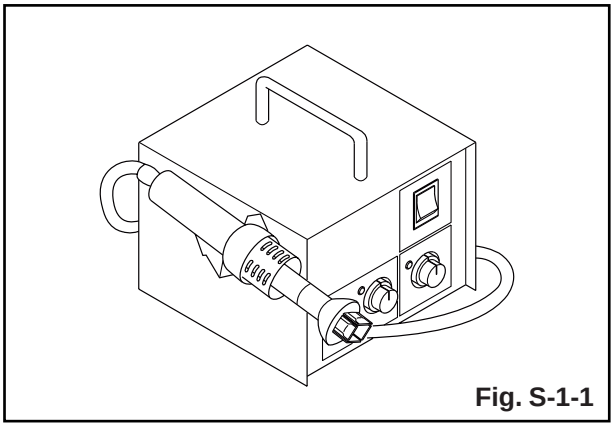


Fig. S-1-1

(2) Remove the flat pack-IC with tweezers while applying the hot air.

(3) Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)

(4) Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

Caution:

1. The Flat Pack-IC shape may differ by models. Use an appropriate hot-air flat pack-IC desoldering machine, whose shape matches that of the Flat Pack-IC.
2. Do not supply hot air to the chip parts around the flat pack-IC for over 6 seconds because damage to the chip parts may occur. Put masking tape around the flat pack-IC to protect other parts from damage. (Fig. S-1-2)

3. The flat pack-IC on the CBA is affixed with glue, so be careful not to break or damage the foil of each pin or the solder lands under the IC when removing it.

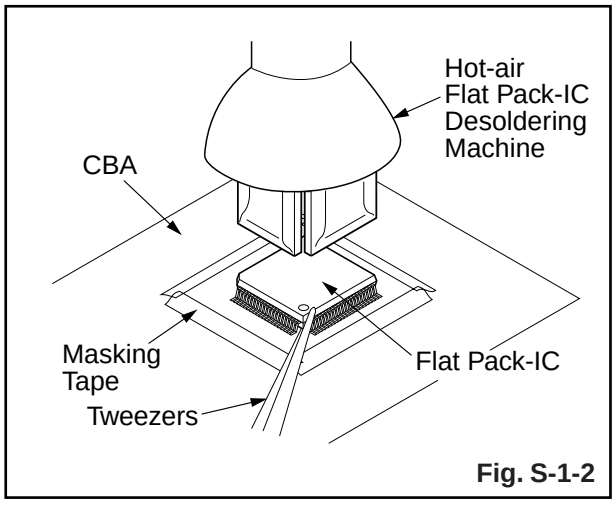


Fig. S-1-2

With Soldering Iron:

(1) Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)

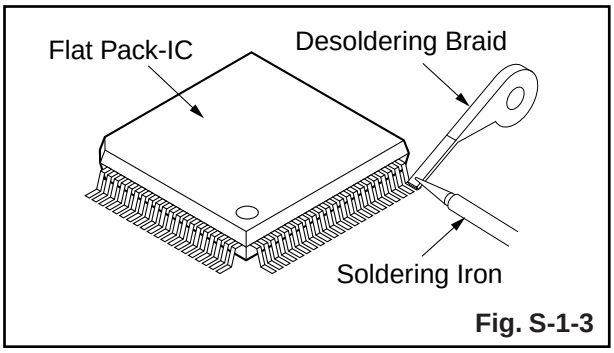


Fig. S-1-3

(2) Lift each lead of the flat pack-IC upward one by one, using a sharp pin or wire to which solder will not adhere (iron wire). When heating the pins, use a fine tip soldering iron or a hot air desoldering machine. (Fig. S-1-4)

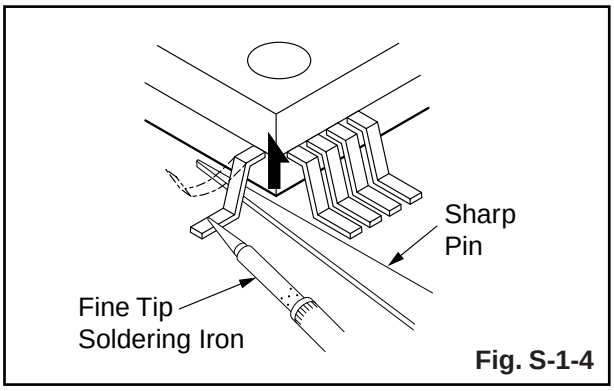


Fig. S-1-4

(3) Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)

(4) Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

With Iron Wire:

(1) Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)

(2) Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.

(3) While heating the pins using a fine tip soldering iron or hot air blower, pull up the wire as the solder melts so as to lift the IC leads from the CBA contact pads as shown in Fig. S-1-5.

(4) Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)

(5) Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

Note:

When using a soldering iron, care must be taken to ensure that the flat pack-IC is not being held by glue. When the flat pack-IC is removed from the CBA, handle it gently because it may be damaged if force is applied.

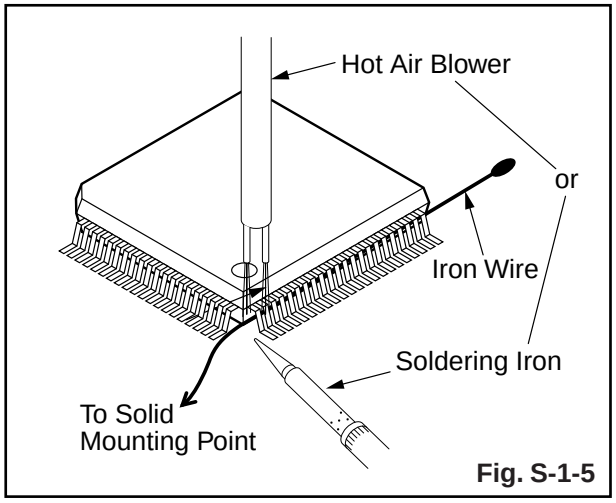


Fig. S-1-5

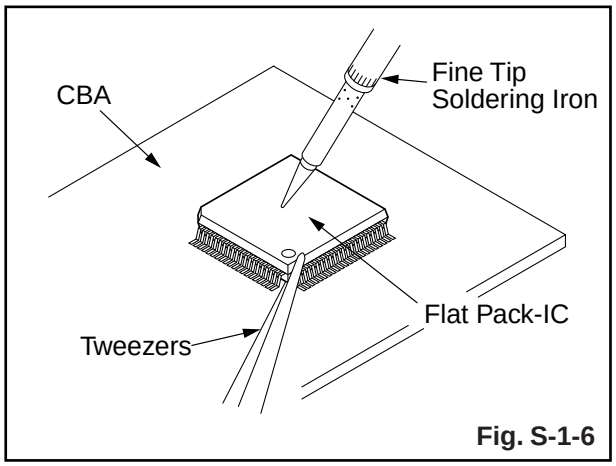


Fig. S-1-6

2. Installation

(1) Using desoldering braid, remove the solder from the foil of each pin of the flat pack-IC on the CBA so you can install a replacement flat pack-IC more easily.

(2) The "●" mark on the flat pack-IC indicates pin 1. (See Fig. S-1-7.) Be sure this mark matches the 1 on the PCB when positioning for installation. Then presolder the four corners of the flat pack-IC. (See Fig. S-1-8.)

(3) Solder all pins of the flat pack-IC. Be sure that none of the pins have solder bridges.

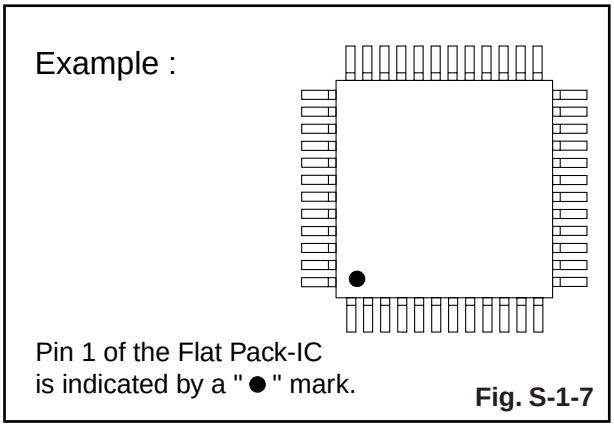


Fig. S-1-7

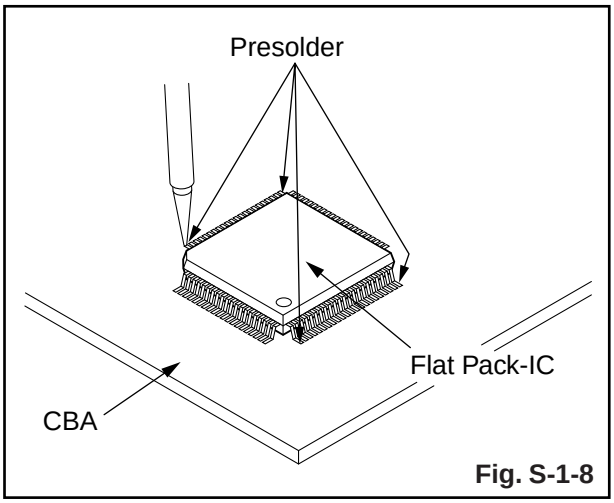


Fig. S-1-8

Instructions for Handling Semi-conductors

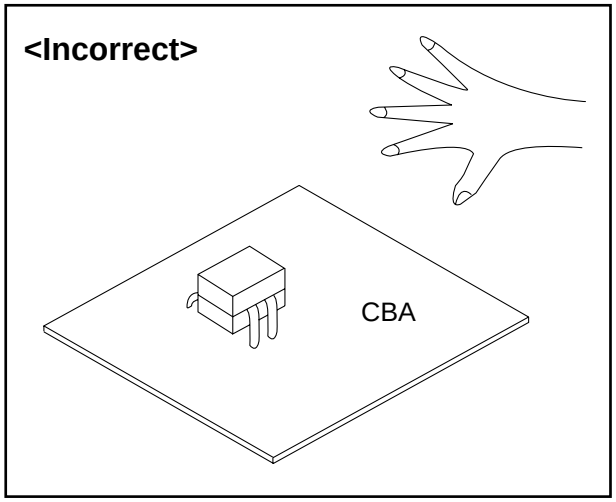
Electrostatic breakdown of the semi-conductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

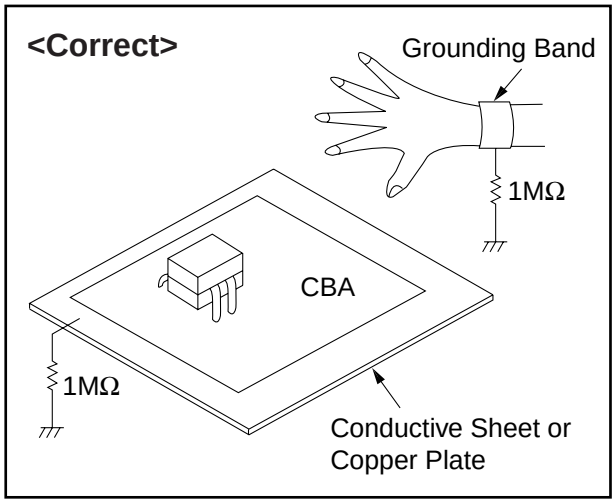
1. Ground for Human Body

Be sure to wear a grounding band (1MΩ) that is properly grounded to remove any static electricity that may be charged on the body.

2. Ground for Workbench

(1) Be sure to place a conductive sheet or copper plate with proper grounding (1MΩ) on the workbench or other surface, where the semi-conductors are to be placed. Because the static electricity charge on clothing will not escape through the body grounding band, be careful to avoid contacting semi-conductors with your clothing.





PREPARATION FOR SERVICING

How to Enter the Service Mode

About Optical Sensors

Caution:

An optical sensor system is used for the Tape Start and End Sensors on this equipment. Carefully read and follow the instructions below. Otherwise the unit may operate erratically.

What to do for preparation

Insert a tape into the Deck Mechanism Assembly and press the PLAY button. The tape will be loaded into the Deck Mechanism Assembly. Make sure the power is on, connect TP502 (S-INH) to GND. This will stop the function of Tape Start Sensor, Tape End Sensor and Reel Sensors. (If these TPs are connected before plugging in the unit, the function of the sensors will stay valid.) See Fig. 1.

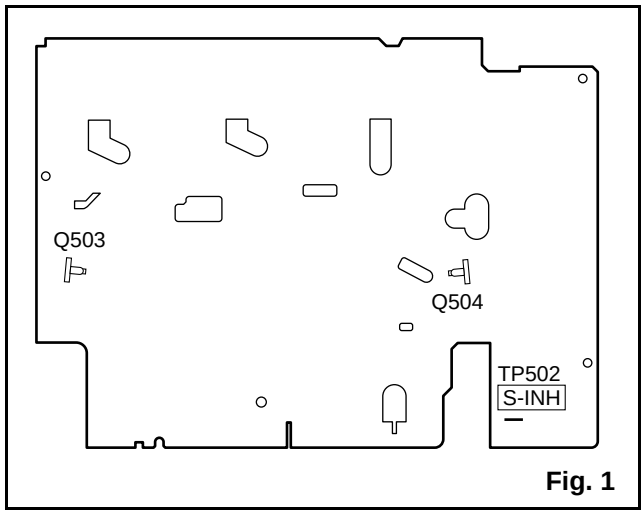
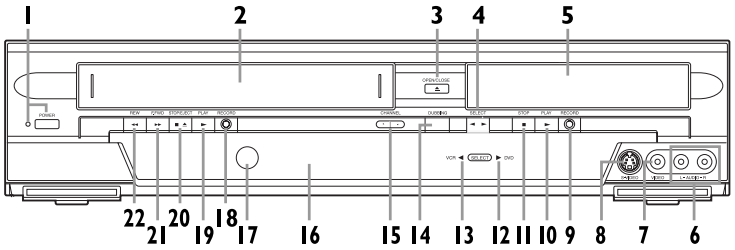


Fig. 1

Note: Because the Tape End Sensors are inactive, do not run a tape all the way to the start or the end of the tape to avoid tape damage.

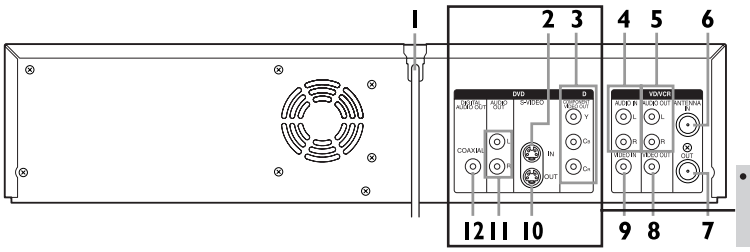
OPERATING CONTROLS AND FUNCTIONS

Front Panel



1. **POWER button / indicator (DVD/VCR)**
   Press to turn the unit on and off.
   If timer programmings have been set, press to set the unit in timer-standby mode. Press to cancel the timer standby mode, and turn the unit on.
   Lights up when power is on.
2. **Cassette compartment (VCR)**
   Insert a tape here.
3. **⏏ OPEN/CLOSE button (DVD)**
   Press to open or close the disc tray.
4. **Select ◄► button (DVD/VCR)**
   Press to select the component you wish to operate.
5. **Disc tray (DVD)**
   Place a disc when open.
6. **AUDIO INPUT jacks (LINE2) (DVD/VCR)**
   Use to connect external equipment with standard audio cables.
7. **VIDEO INPUT jack (LINE2) (DVD/VCR)**
   Use to connect external equipment with a standard video cable.
8. **S-VIDEO INPUT jack (LINE2) (DVD only)**
   Use to connect the S-Video output of external equipment with an S-Video cable.
9. **RECORD button (DVD)**
   Press to start recording.
   Press repeatedly to start a One-Touch Recording.
10. **PLAY button (DVD)**
    Press to start or resume play.
11. **STOP button (DVD)**
    Press to stop playback or recording.
    Press to cancel the proceeding timer recording in DVD.
12. **DVD SELECT indicator**
    This indicator appears when the DVD output mode is selected.
13. **VCR SELECT indicator**
    This indicator appears when the VCR output mode is selected.
14. **DUBBING button (DVD/VCR)**
    Press to start VCR to DVD (DVD to VCR) duplication which you set in the SETUP menu.
15. **CHANNEL ▼ / ▲ button (DVD/VCR)**
    Press to change the channel up and down.
16. **Display (DVD/VCR)**
    Refer to "Guide to Displays on the front panel".
17. **Remote control sensor (DVD/VCR)**
    Receive signals from your remote control so that you can control the unit from a distance.
18. **RECORD button (VCR)**
    Press once to start a recording. Press repeatedly to start a One-Touch Recording.
19. **PLAY button (VCR)**
    Press to start playback.
20. **STOP/EJECT button (VCR)**
    EJECT button-Press to remove the tape from the unit.
    STOP button-Press to stop the tape motion.
    Press to cancel the proceeding timer recording in VCR.
21. **F.FWD button (VCR)**
    Press to rapidly advance the tape, or view the picture rapidly in forward during playback. (Forward Search)
22. **REW button (VCR)**
    Press to rewind the tape, or to view the picture rapidly in reverse during the playback mode. (Rewind Search)

Rear Panel

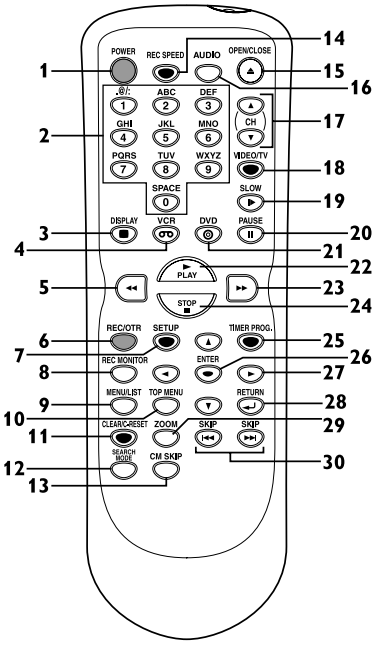


• These jacks are useful only in DVD mode.

1. **AC Power Cord (DVD/VCR)**
   Connect to a standard AC outlet to supply power to this unit.
2. **S-VIDEO INPUT jack (LINE1) (DVD only)**
   Use to connect the S-Video output of external equipment with an S-Video cable.
3. **COMPONENT VIDEO OUTPUT jacks (DVD only)**
   Use to connect a TV monitor with component video inputs with component video cables.
4. **AUDIO INPUT jacks (LINE1) (DVD/VCR)**
   Use to connect external equipment with standard audio cables.
5. **AUDIO OUTPUT jacks (DVD/VCR)**
   Use to connect a TV monitor, AV receiver or other equipment with standard audio cables.
6. **TV ANTENNA IN jack (DVD/VCR)**
   Use to connect an antenna.
7. **TV ANTENNA OUT jack (DVD/VCR)**
   Use to connect an antenna cable to pass the signal from the TV ANTENNA IN to your TV monitor.
8. **VIDEO OUTPUT jack (DVD/VCR)**
   Use to connect a TV monitor, AV receiver or other equipment with a standard video cable.
9. **VIDEO INPUT jack (LINE1) (DVD/VCR)**
   Use to connect external equipment with a standard video cable.
10. **S-VIDEO OUTPUT jack (DVD only)**
    Use to connect the S-Video input of a TV monitor, AV receiver or other equipment with an S-Video cable.
11. **AUDIO OUTPUT jacks (DVD only)**
    Use to connect a TV monitor, AV receiver or other equipment with standard audio cables.
12. **COAXIAL DIGITAL AUDIO OUTPUT jack (DVD only)**
    Use to connect an AV receiver, Dolby Digital decorder or other equipment with a coaxial digital input with a digital coaxial cable.

Note: Do not touch the inner pins of the jacks on the rear panel. Electrostatic discharge may cause permanent damage to the unit.

Remote Control

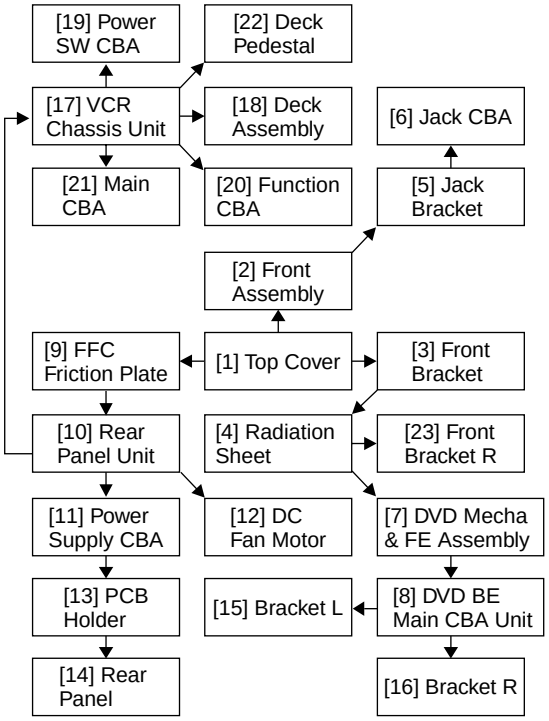


1. **POWER button (DVD/VCR)**
   Press to turn the unit on and off. If timer programmings have been set, press to set the unit in timer-standby mode. Press to cancel the timer standby mode, and turn the unit on.
2. **Number buttons (DVD/VCR)**
   Press to select channel numbers.
   Press to select a title/chapter/track on display or a TV channel.
   Or press to enter values for the settings in the SETUP menu.
3. **DISPLAY button (DVD/VCR)**
   Press to display or change the on-screen display.
4. **VCR button**
   Press to activate the remote control in VCR mode.
   Press to select the VCR output mode.
5. **◀◀ button (DVD/VCR)**
   • DVD mode
   During playback, press to play fast reverse.
   Or during playback is paused, press to play slow reverse.
   • VCR mode
   Press to rewind the tape, or to view the picture rapidly in reverse during the playback mode.
6. **REC/OTR button (DVD/VCR)**
   Press once to start a recording. Press repeatedly to start a One-Touch Recording.
7. **SETUP button (DVD/VCR)**
   Press to display the setup menu.
8. **REC MONITOR button (DVD)**
   Press to check the video to be recorded before attempting.
9. **MENU/LIST button (DVD)**
   Press to display the Disc menu.
   To change ORIGINAL and PLAYLIST on the TV screen. (VR mode only)
10. **TOP MENU button (DVD)**
    Press to display the top menu.
11. **CLEAR/C-RESET button (DVD/VCR)**
    • DVD mode
    Press to clear the password once entered or to cancel the programming for CD or to clear the selecting marker number in the marker setup mode or to clear the program once entered in the timer recording setting mode,etc.
    • VCR mode
    Press to reset the tape counter.
12. **SEARCH MODE button (VCR)**
    To call up the index or time search menu.
13. **CM SKIP button (DVD)**
    During playback, press to skip the 30 seconds.
14. **REC SPEED button (DVD/VCR)**
    Press to switch the recording speed.
15. **OPEN/CLOSE ▲ button (DVD)**
    Press to open or close the disc tray.
16. **AUDIO button (VCR)**
    During playback a HiFi video tape, press to change the AUDIO OUT setting "HiFi" and "MONO".
17. **CH ▲ / ▼ buttons (DVD/VCR)**
    • DVD mode
    Press to change the channel up and down.
    • VCR mode
    Press to change the channel up and down.
    Press to adjust the tracking during playback or in slow motion of the tape. Or while playback is in still mode, adjust the picture blurred vertically.
18. **VIDEO/TV button (DVD/VCR)**
    Press to select VIDEO or TV position.
19. **SLOW button (VCR)**
    During playback, press to view the video tape in slow motion.
20. **PAUSE ❚❚ button (DVD/VCR)**
    Press to pause play or recording.
21. **DVD button**
    Press to activate the remote control in DVD mode.
    Press to select the DVD output mode.
22. **PLAY ▶ button (DVD/VCR)**
    Press to start or resume play.
23. **▶▶ button (DVD/VCR)**
    • DVD mode
    During playback, press to play fast forward.
    • VCR mode
    Press to rapidly advance the tape, or view the picture rapidly in forward during playback.
24. **STOP ■ button (DVD/VCR)**
    Press to stop playback or recording.
25. **TIMER PROG. button (DVD/VCR)**
    Press to display the timer program setting menu.
26. **ENTER button (DVD/VCR)**
    Press to confirm or select menu items.
27. **▲ / ▼ / ◀ / ▶ buttons (DVD/VCR)**
    Press to select items or settings.
28. **RETURN ↵ button (DVD/VCR)**
    Press to return to the previously displayed menu screen.
29. **ZOOM button (DVD)**
    During playback, press to enlarge the picture on the screen.
30. **SKIP |◀◀ button (DVD)**
    During playback, press to skip to the previous chapter or track.
    Or during playback is paused, press to play reverse step by step.
    SKIP ▶▶| button (DVD)
    During playback, press to skip to the next chapter or track.
    Or during playback is paused, press to play forward step by step.

CABINET DISASSEMBLY INSTRUCTIONS

1. Disassembly Flowchart

This flowchart indicates the disassembly steps to gain access to item(s) to be serviced. When reassembling, follow the steps in reverse order. Bend, route, and dress the cables as they were originally.



2. Disassembly Method

ID/ LOC. No.	PART	REMOVAL		
		Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	Note
[1]	Top Cover	D1	6(S-1)	---
[2]	Front Assembly	D2	*5(L-1), *3(L-2), *CN1609	1 1-1 1-2 1-3
[3]	Front Bracket	D2	2(S-2), 2(S-3)	---
[4]	Radiation Sheet	D2	----------	---
[5]	Jack Bracket	D3	2(S-4)	---
[6]	Jack CBA	D3	----------	---
[7]	DVD Mecha & FE Assembly	D4	2(S-5A), 2(S-5B), *CN1604, *CN1	---
[8]	DVD BE Main CBA Unit	D4	4(S-6), *CN201, *CN202	---
[9]	FFC Friction Plate	D5	2(S-7)	---
[10]	Rear Panel Unit	D5	5(S-8), 3(S-9), (S-10), *CN1606, *CN1608	---
[11]	Power Supply CBA	D6	4(S-11), AC Cord, Earth Plate	---
[12]	DC Fan Motor	D6	2(S-12)	---
[13]	PCB Holder	D6	3(S-13)	---
[14]	Rear Panel	D6	----------	---
[15]	Bracket L	D7	2(S-14)	---
[16]	Bracket R	D7	2(S-15)	---
[17]	VCR Chassis Unit	D7	5(S-16), 5(S-17), (S-18), (S-19)	---
[18]	Deck Assembly	D8	(S-20), (S-21), Desolder	2 3
[19]	Power SW CBA	D8	Desolder	---
[20]	Function CBA	D8	Desolder	---
[21]	Main CBA	D8	----------	---
[22]	Deck Pedestal	D9	8(S-22)	---
[23]	Front Bracket R	D9	(S-23)	---
↓ (1)	↓ (2)	↓ (3)	↓ (4)	↓ (5)	

Note:

(1): Identification (location) No. of parts in the figures

(2): Name of the part

(3): Figure Number for reference

(4): Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
P=Spring, L=Locking Tab, S=Screw, CN=Connector

*=Unhook, Unlock, Release, Unplug, or Desolder
e.g. 6(S-1) = six Screws (S-1),
5(L-1) = five Locking Tabs (L-1)

(5): Refer to “Reference Notes.”

Reference Notes

CAUTION 1: Locking Tabs (L-1) and (L-2) are fragile. Be careful not to break them.

1-1. Release five Locking Tabs (L-1).

1-2. Release three Locking Tabs (L-2)

1-3. Disconnect Connector (CN1609), and remove the Front Assembly.

2. When reassembling, solder wire jumpers as shown in Fig. D8.

3. Before installing the Deck Assembly, be sure to place the pin of LD-SW on Main CBA as shown in Fig. D8. Then, install the Deck Assembly while aligning the hole of Cam Gear with the pin of LD-SW, the shaft of Cam Gear with the hole of LD-SW as shown in Fig. D8.

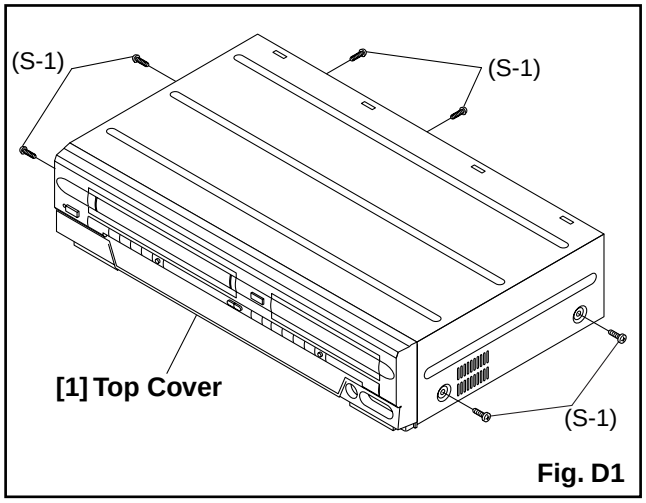


Fig. D1

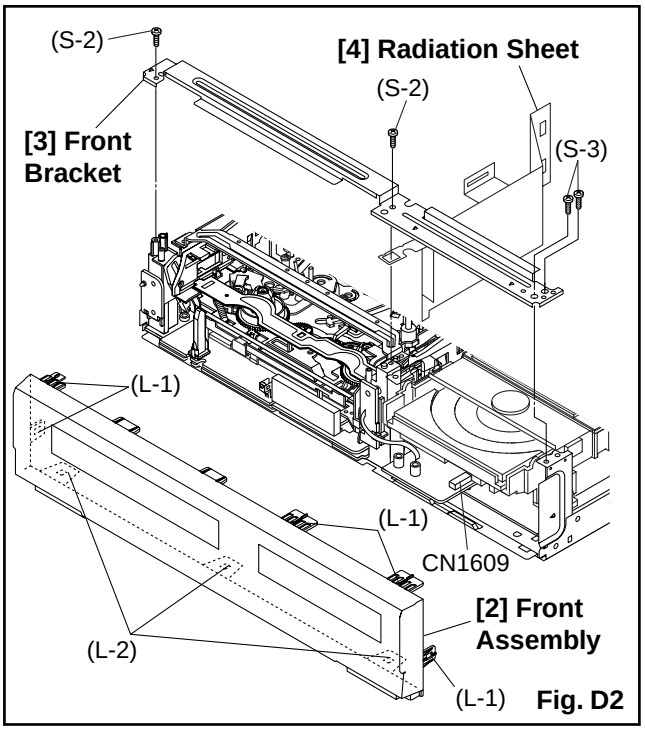


Fig. D2

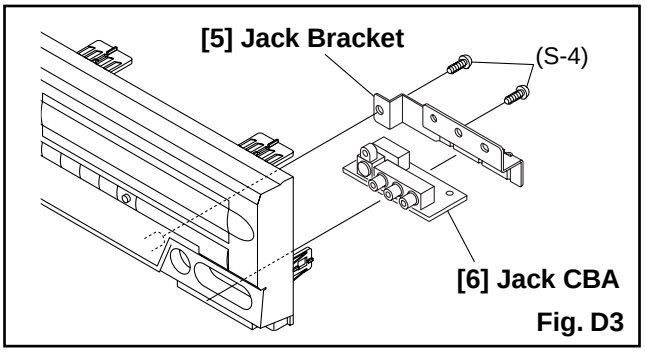


Fig. D3

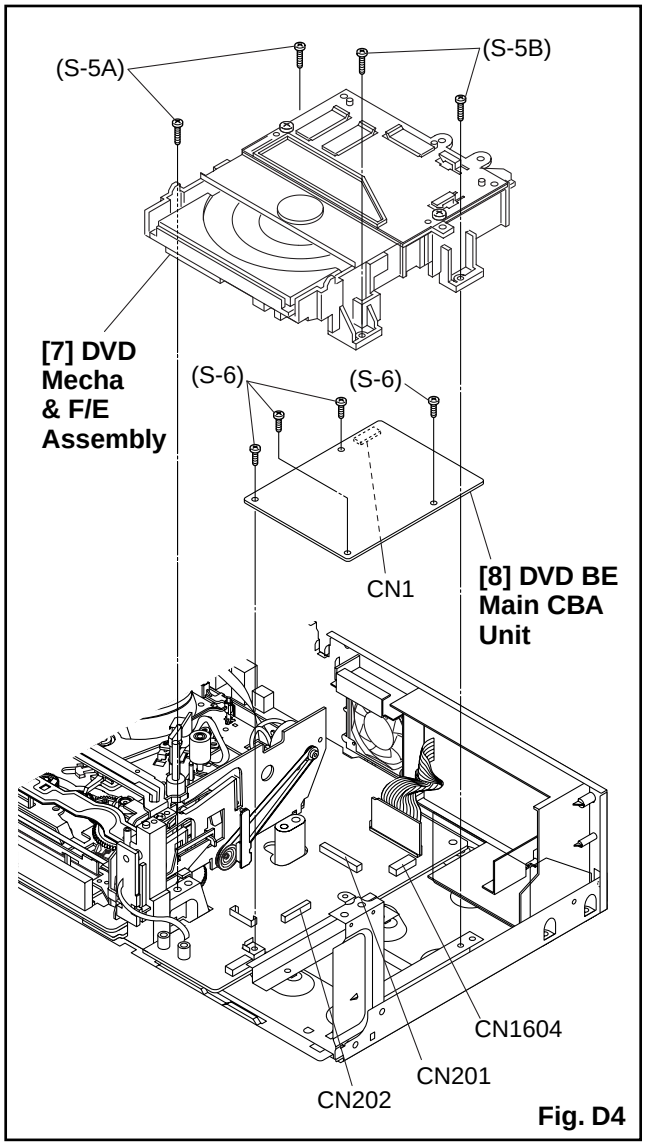


Fig. D4

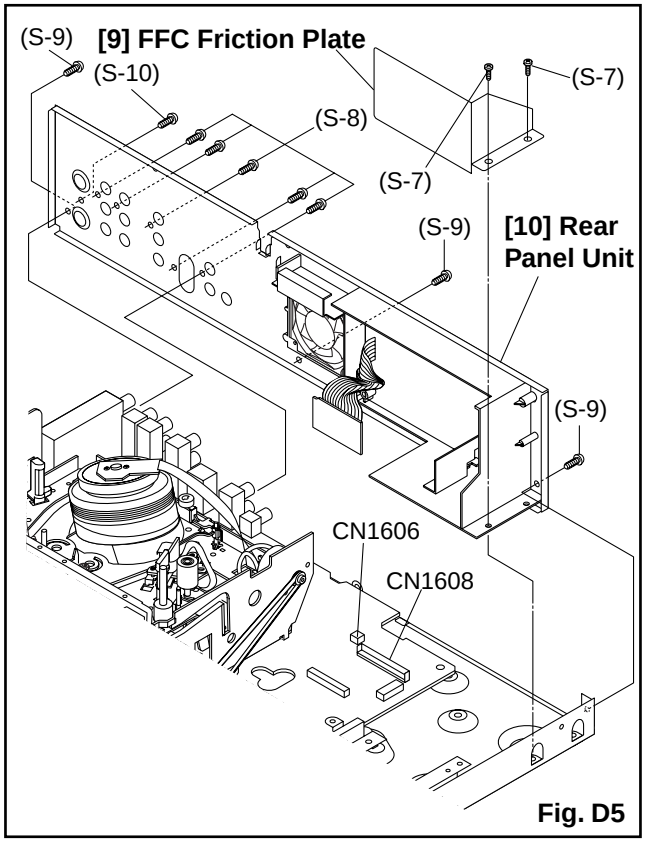


Fig. D5

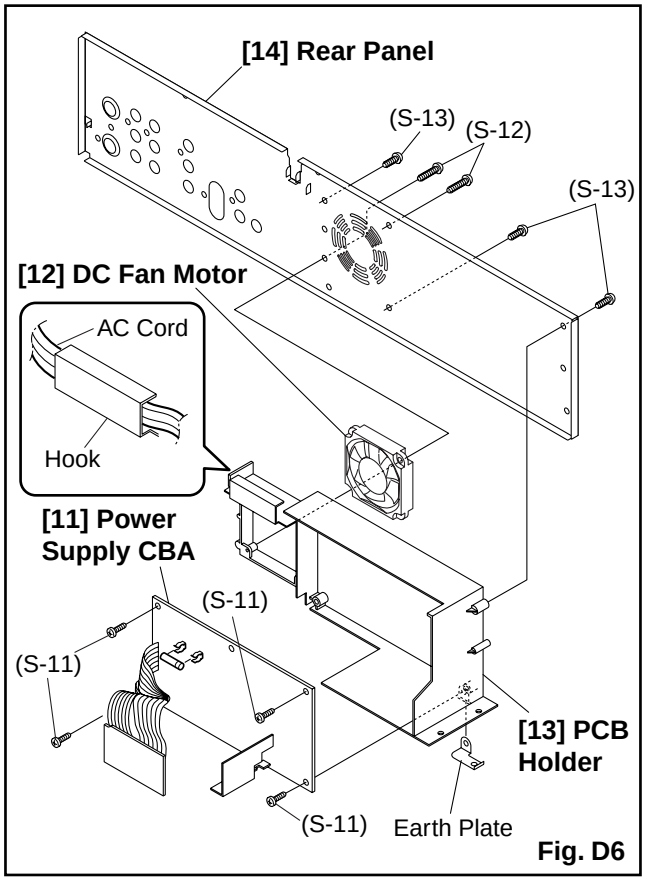


Fig. D6

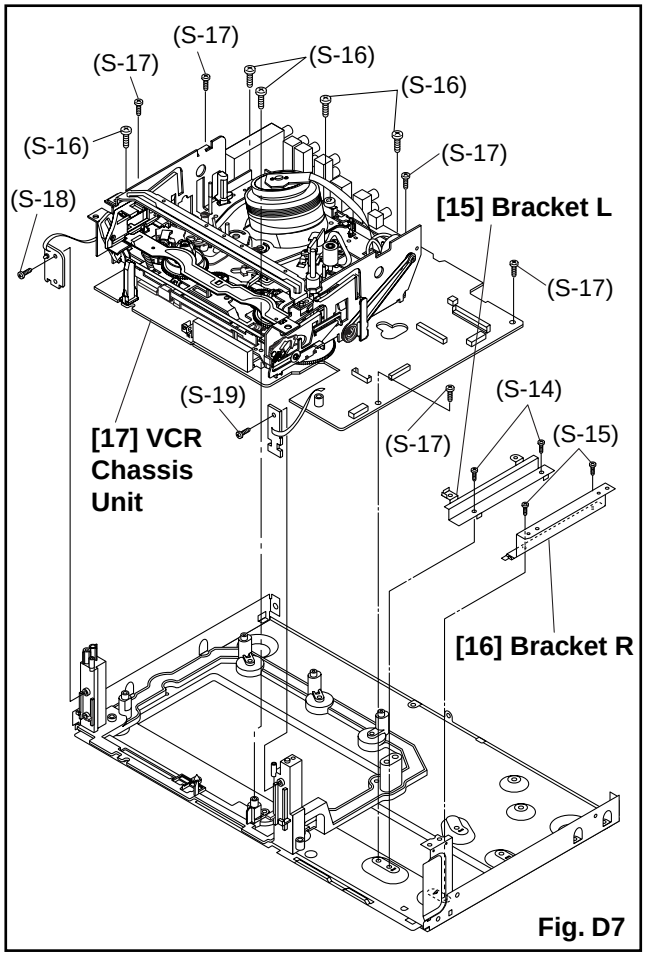
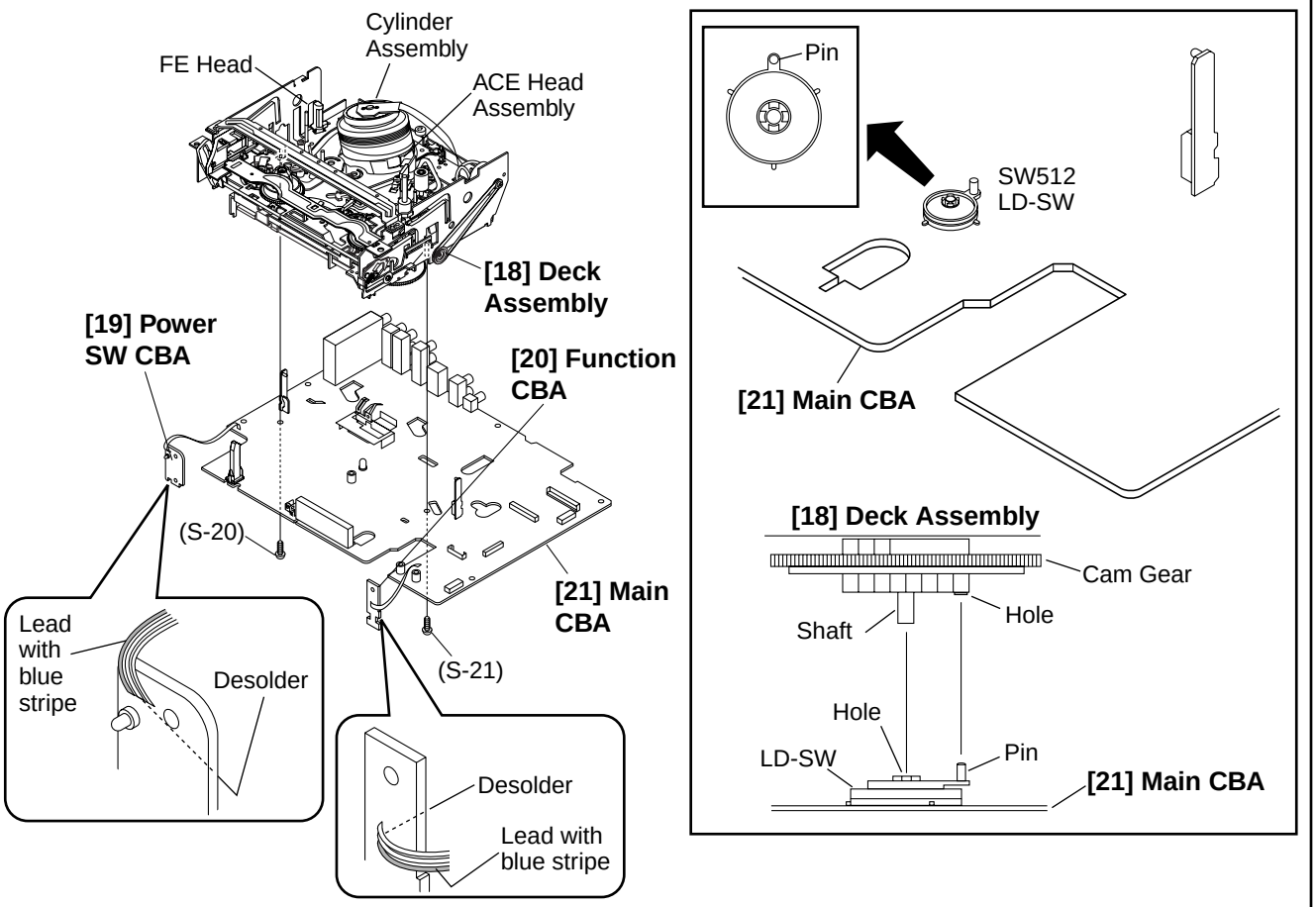
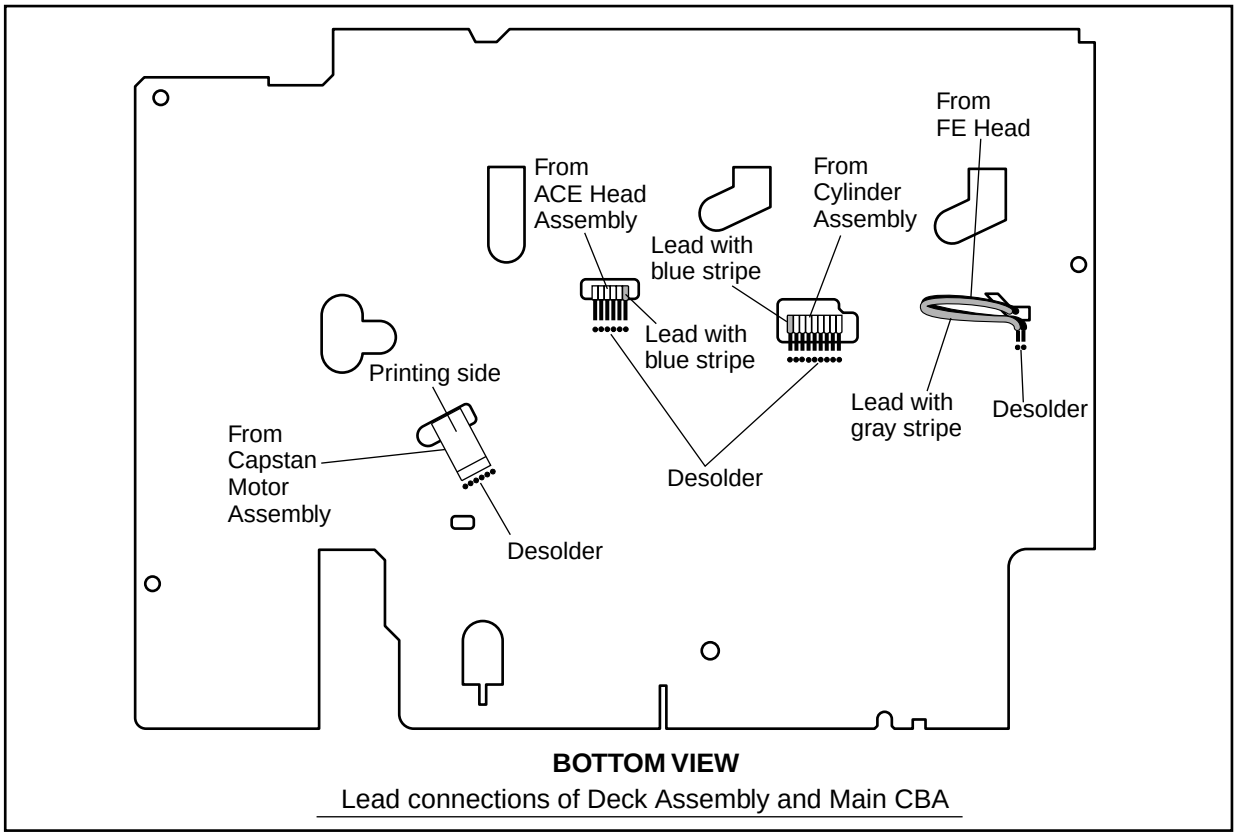

(S-17)
(S-17)
(S-16)
(S-16)
(S-16)
(S-17)
(S-18)
[15] Bracket L
(S-17)
(S-19)
(S-14)
(S-15)
(S-17)
[17] VCR
Chassis
Unit
[16] Bracket R

Fig. D7





BOTTOM VIEW

Lead connections of Deck Assembly and Main CBA

Fig. D8

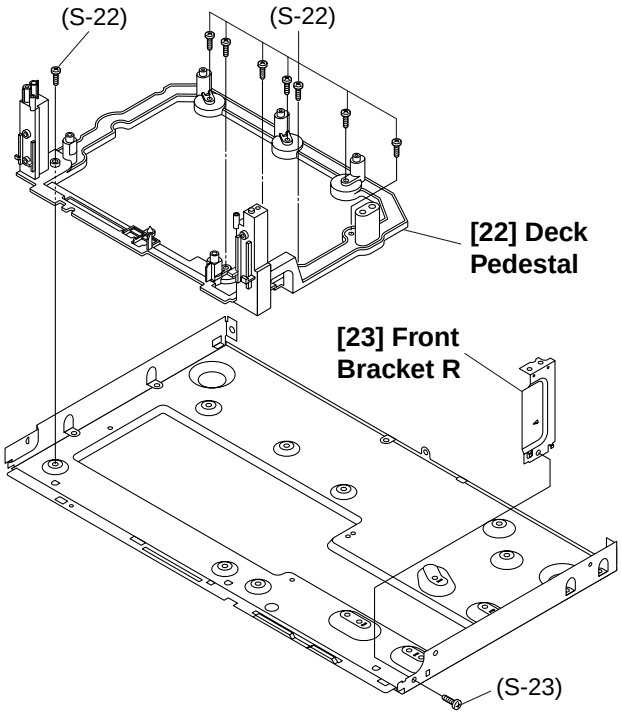
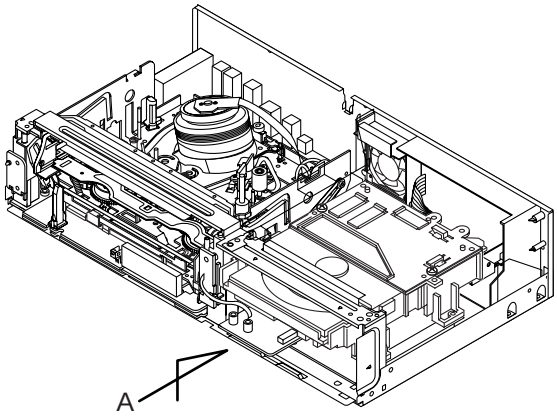
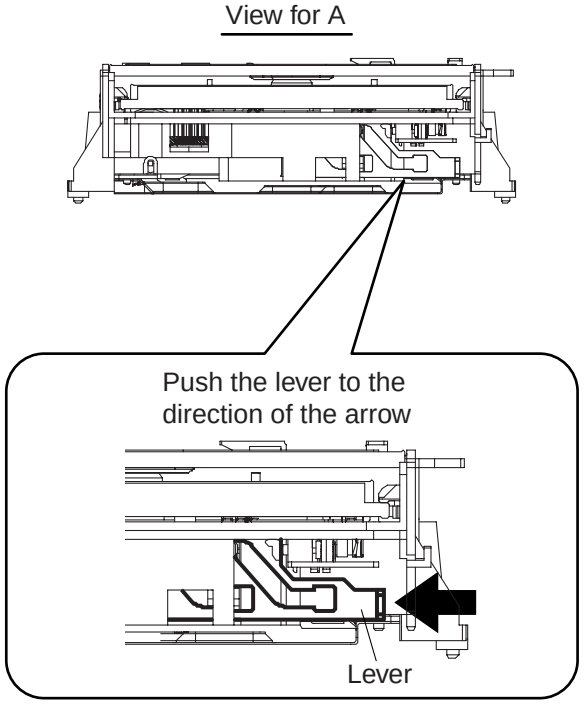


Fig. D9

HOW TO EJECT MANUALLY

1. Remove the Top Cover.
2. Remove the Front Assembly.
3. Push the lever to the direction of the arrow as shown below.

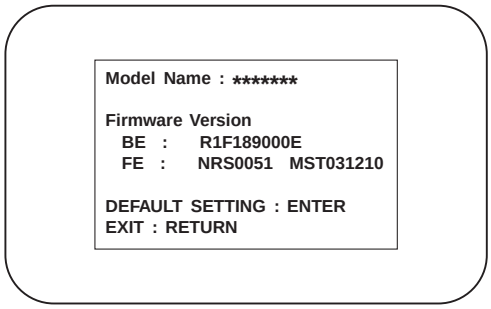




HOW TO INITIALIZE THE DVD RECORDER

To put the program back at the factory-default, initialize the DVD recorder as the following procedure.

1. Turn the DVD recorder on.
2. Confirm that no disc is loaded or that the disc tray is open. To put the DVD recorder into the Version display mode, press [CM SKIP], [1], [2], and [3] buttons on the remote control in the order.
   Fig. A appears on the screen.



*1: "*******" differ depending on the models.
*2: Firmware Version differ depending on the models, and indication is one example.

Fig. A: Version Display Mode Screen

3. Press [ENTER] button, then the DVD recorder starts initializing. When the initializing is completed, the DVD recorder exits the Version display mode and turns off the power automatically.
   * To move into the Normal mode from the Version display mode, press [RETURN] button on the remote control instead of [ENTER] button.
   * When [POWER] button is pressed before [ENTER] button is pressed, the DVD recorder exits the Version display mode, then the power turns off.

ELECTRICAL ADJUSTMENT INSTRUCTIONS

General Note: "CBA" is an abbreviation for "Circuit Board Assembly."

NOTE:

1. Electrical adjustments are required after replacing circuit components and certain mechanical parts. It is important to do these adjustments only after all repairs and replacements have been completed. Also, do not attempt these adjustments unless the proper equipment is available.
2. To perform these alignment / confirmation procedures, make sure that the tracking control is set in the center position: Press either "CHANNEL ▼" or "CHANNEL ▲" button on the front panel first, then the "PLAY" button on the front panel.

Test Equipment Required

1. Oscilloscope: Dual-trace with 10:1 probe,
   V-Range: 0.001~50V/Div.,
   F-Range: DC~AC-20MHz
2. Alignment Tape (FL8A)

Head Switching Position Adjustment

Purpose:

To determine the Head Switching position during playback.

Symptom of Misadjustment:

May cause Head Switching noise or vertical jitter in the picture.

Test point	Adj.Point	Mode	Input
TP751(V-OUT) TP302(RF-SW) GND	VR501 (Switching Point) (MAIN CBA)	PLAY (SP)	-----
Tape	**Measurement Equipment**	**Spec.**	
FL8A	Oscilloscope	6.5H±1H (412.7µs±63.5µs)	

Connections of Measurement Equipment

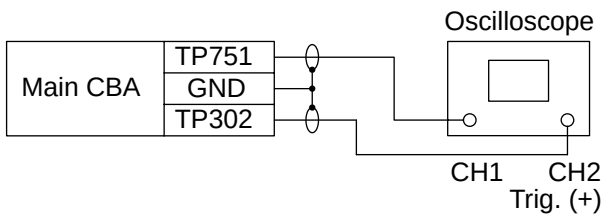
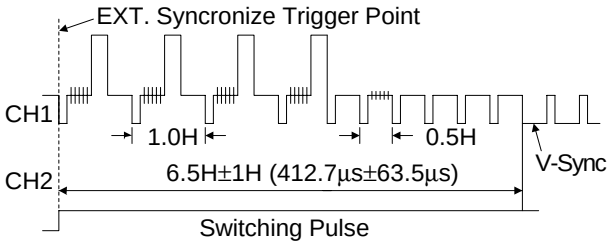


Figure 1



Reference Notes:

Playback the Alignment tape and adjust VR501 so that the V-sync front edge of the CH1 video output waveform is at the 6.5H±1H (412.7µs±63.5µs) delayed position from the rising edge of the CH2 head switching pulse waveform.

FIRMWARE RENEWAL MODE

1. Turn the power on and remove the disc on the tray.
2. To put the DVD recorder into version up mode, press [CM SKIP], [6], [5], and [4] buttons on the remote control unit in the order. The tray will open automatically.
   Fig. a appears on the screen and Fig. b appears on the VFD.

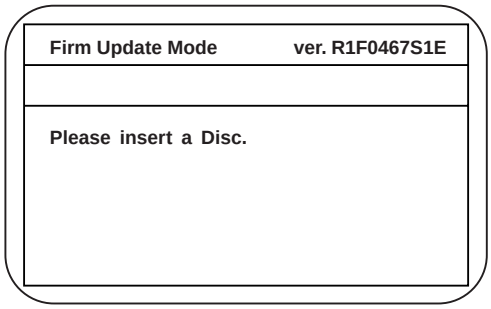


Fig. a Version Up Mode Screen

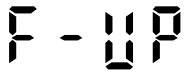


Fig. b VFD in Version Up Mode

3. Load the disc for version up.
   Fig. c appears on the screen. The file on the top is highlighted as the default.
   When there is only one file to exist, Step 4 will start automatically.

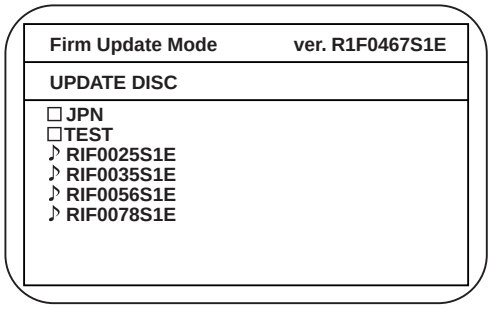


Fig. c Update Disc Screen

4. Select the firmware version using arrow buttons, then press [ENTER] button on the remote control unit.
   Fig. d appears on the screen and Fig.E appears on the VFD. The DVD recorder starts updating.

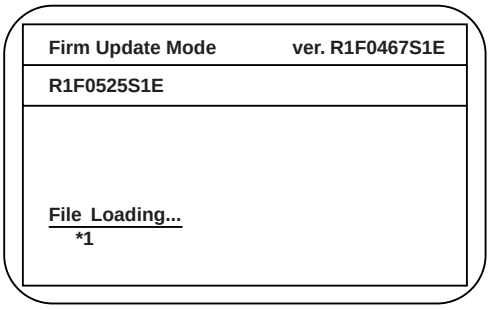


Fig. d Programming Mode Screen

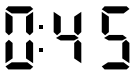


Fig. e VFD in Programming Mode (Example)

The appearance shown in *1 of Fig. d is described as follows.

No.	Appearance	State
1	File Loading...	Sending files into the memory.
2	Firmware Updating...	Writing new version data.
-	Firm Update Failure	Failed in updating.

5. After updating is finished, the tray opens automatically.
   Fig. f appears on the screen and Fig. g appears on the VFD.

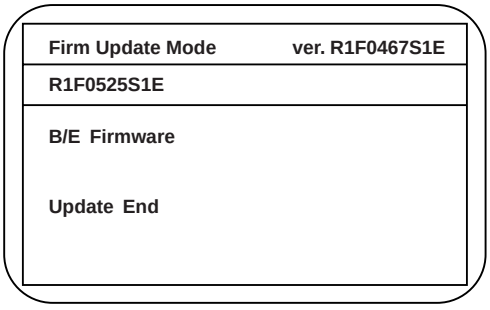


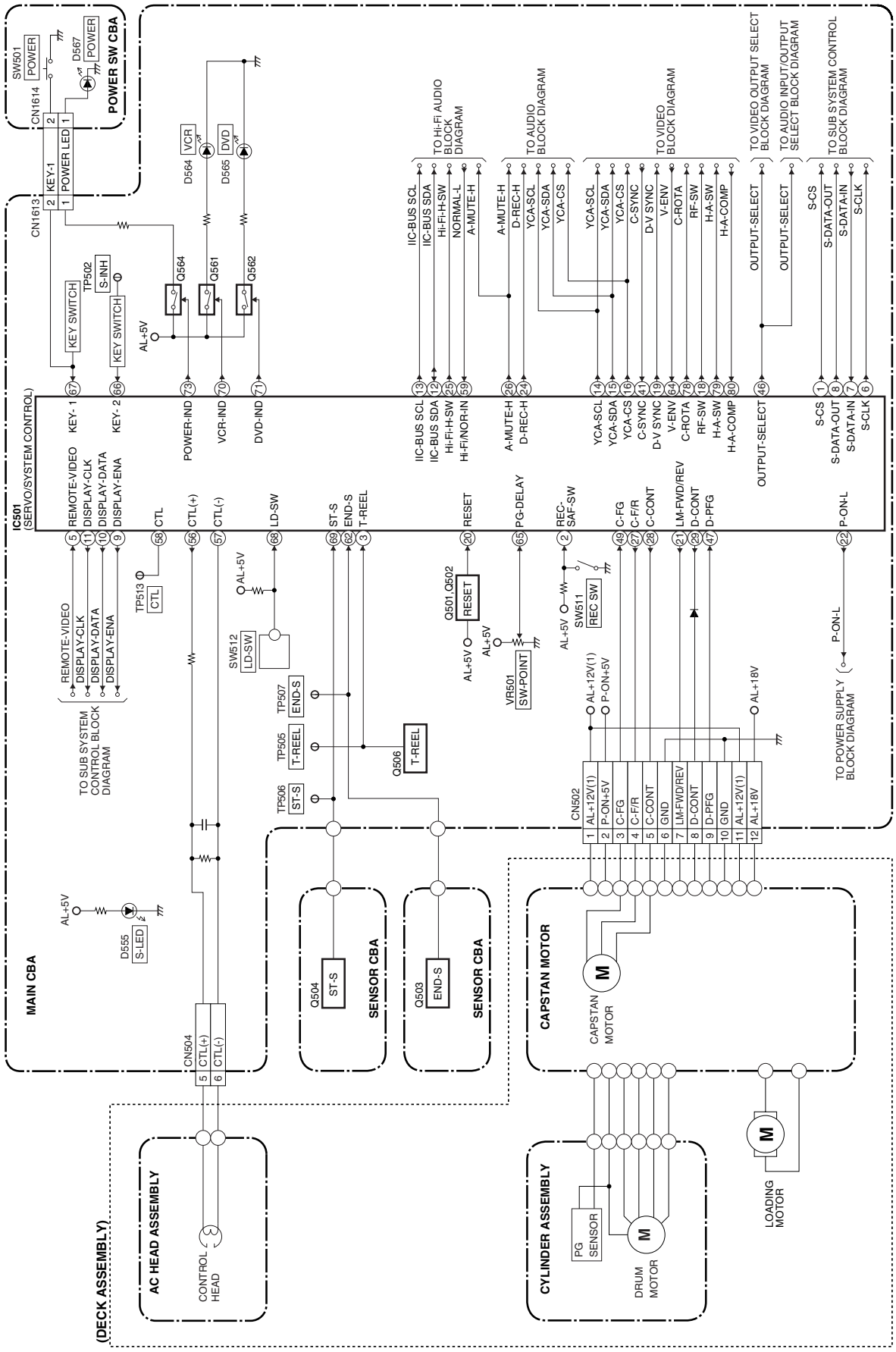
Fig. f Completed Program Mode Screen

Fig. g VFD in Completed Program Mode

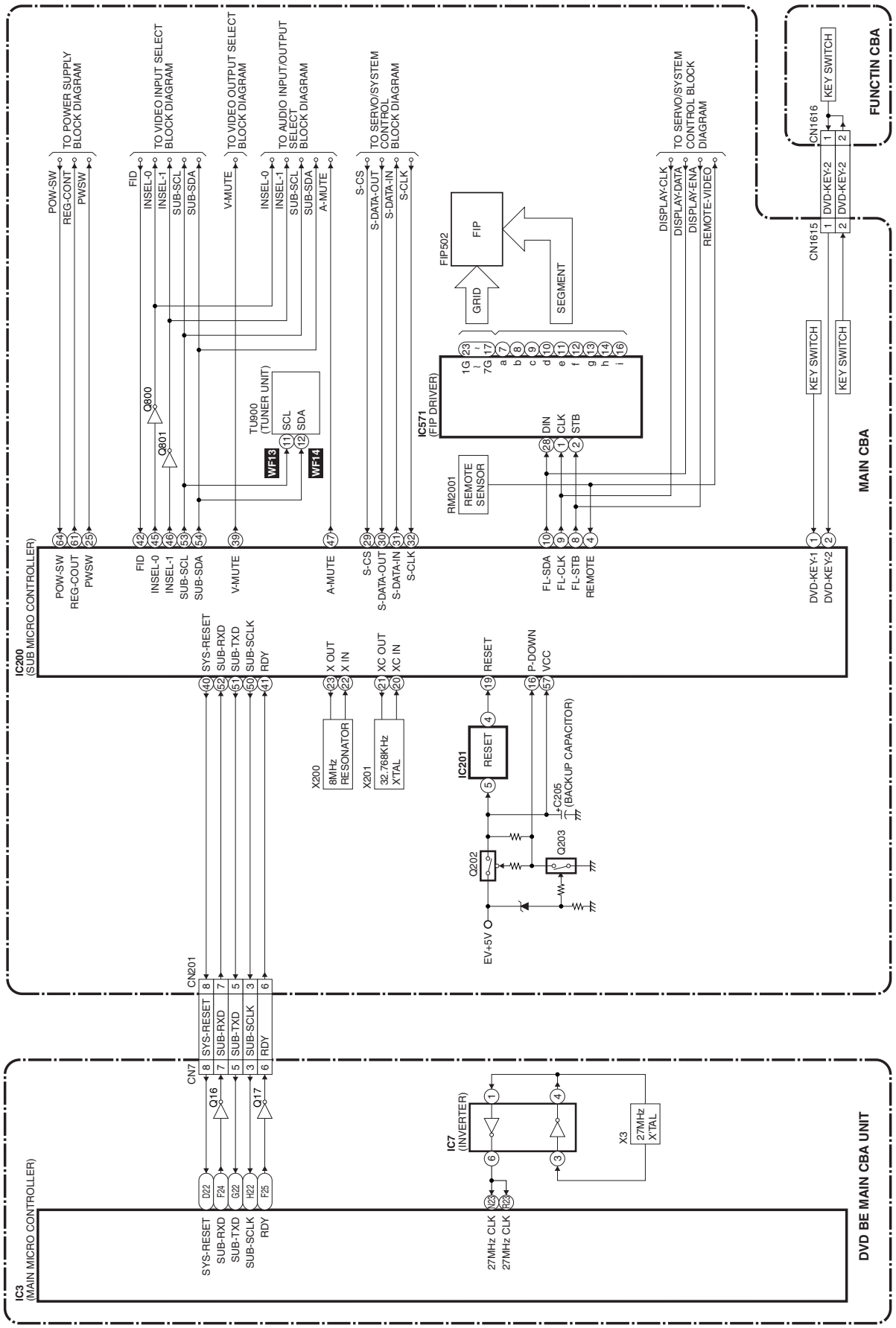
6. Press [POWER] button to turn the power off. Then press it again.

BLOCK DIAGRAMS

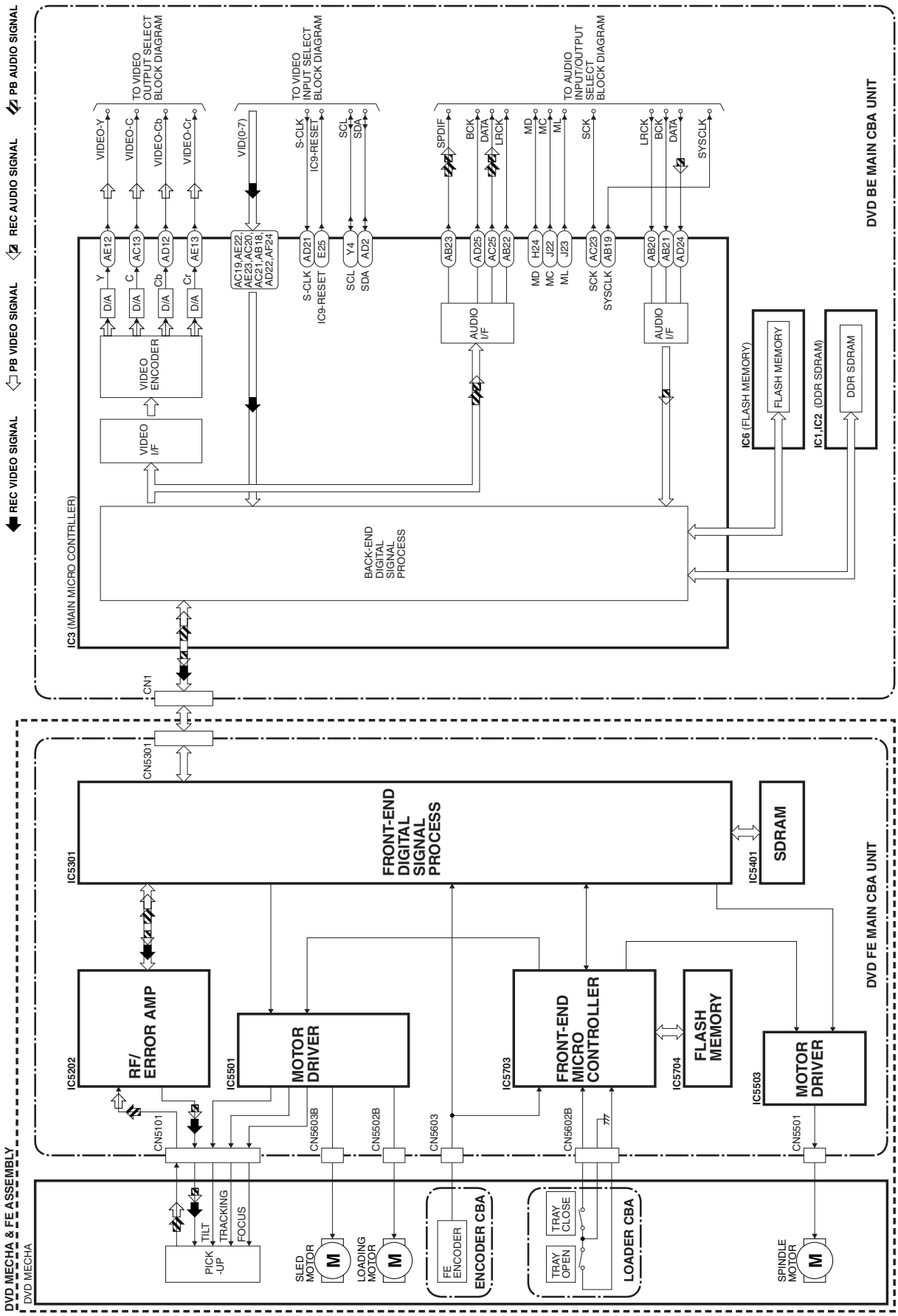
Servo / System Control Block Diagram



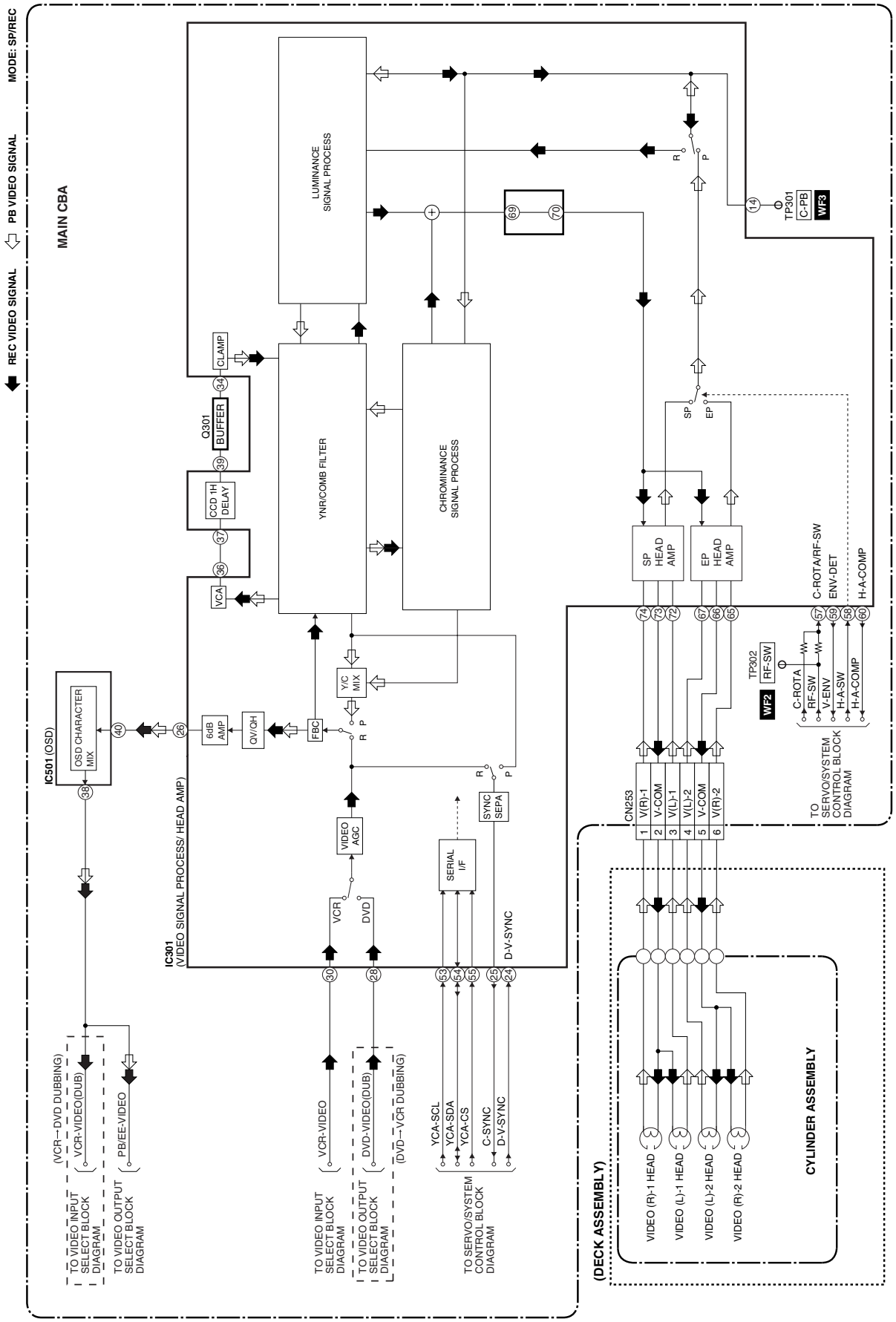
Sub System Control Block Diagram



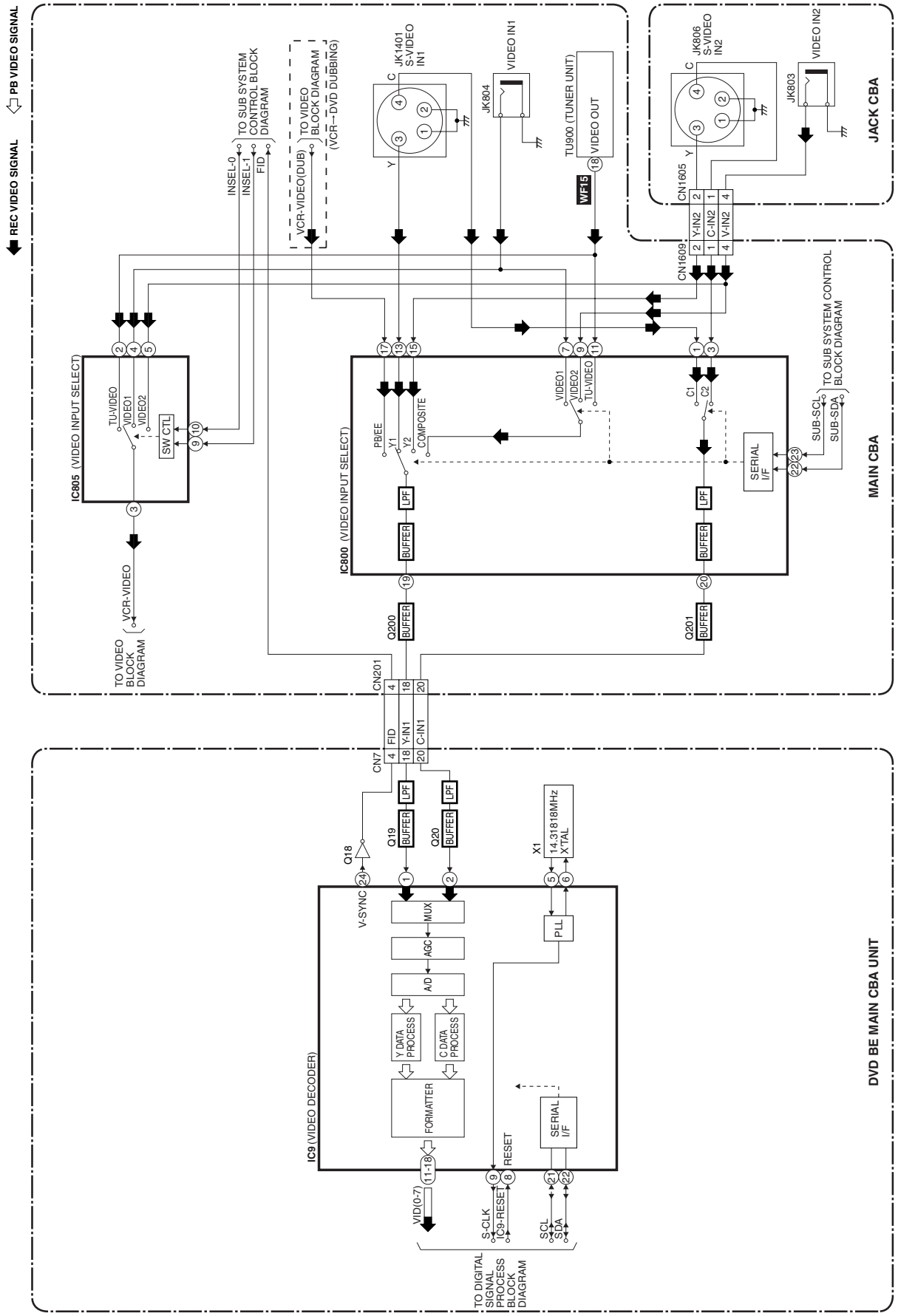
Digital Signal Process Block Diagram



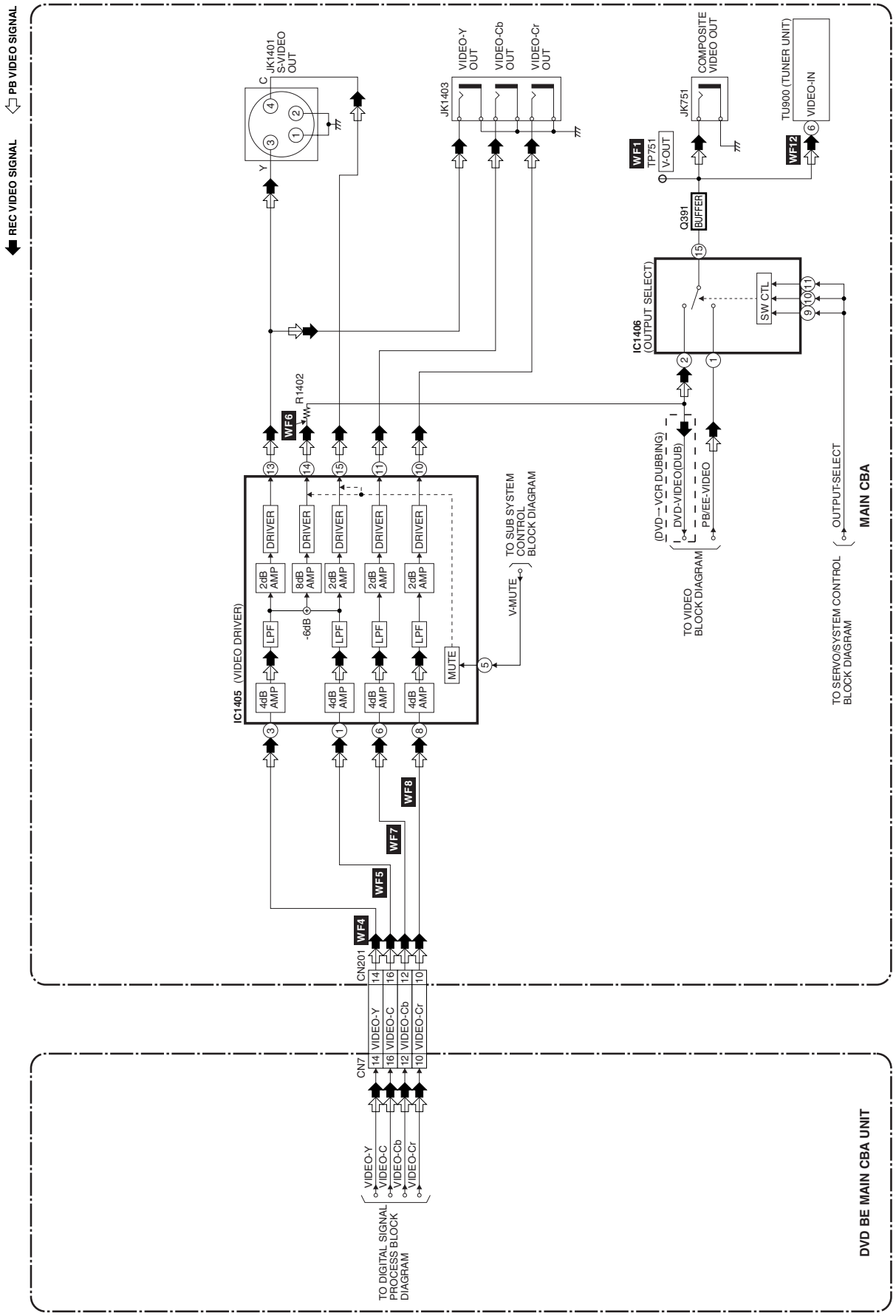
Video Block Diagram



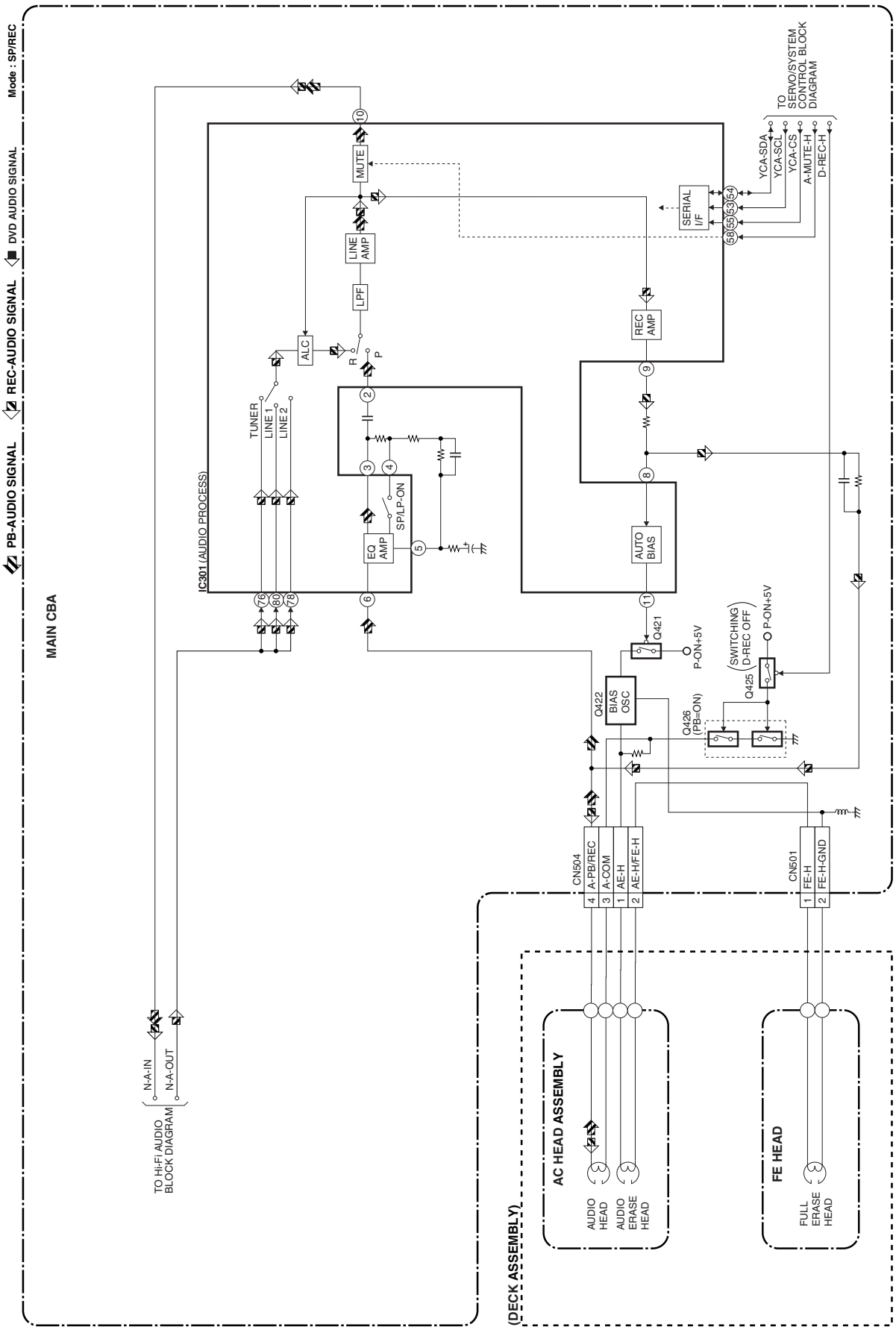
Video Input Select Block Diagram



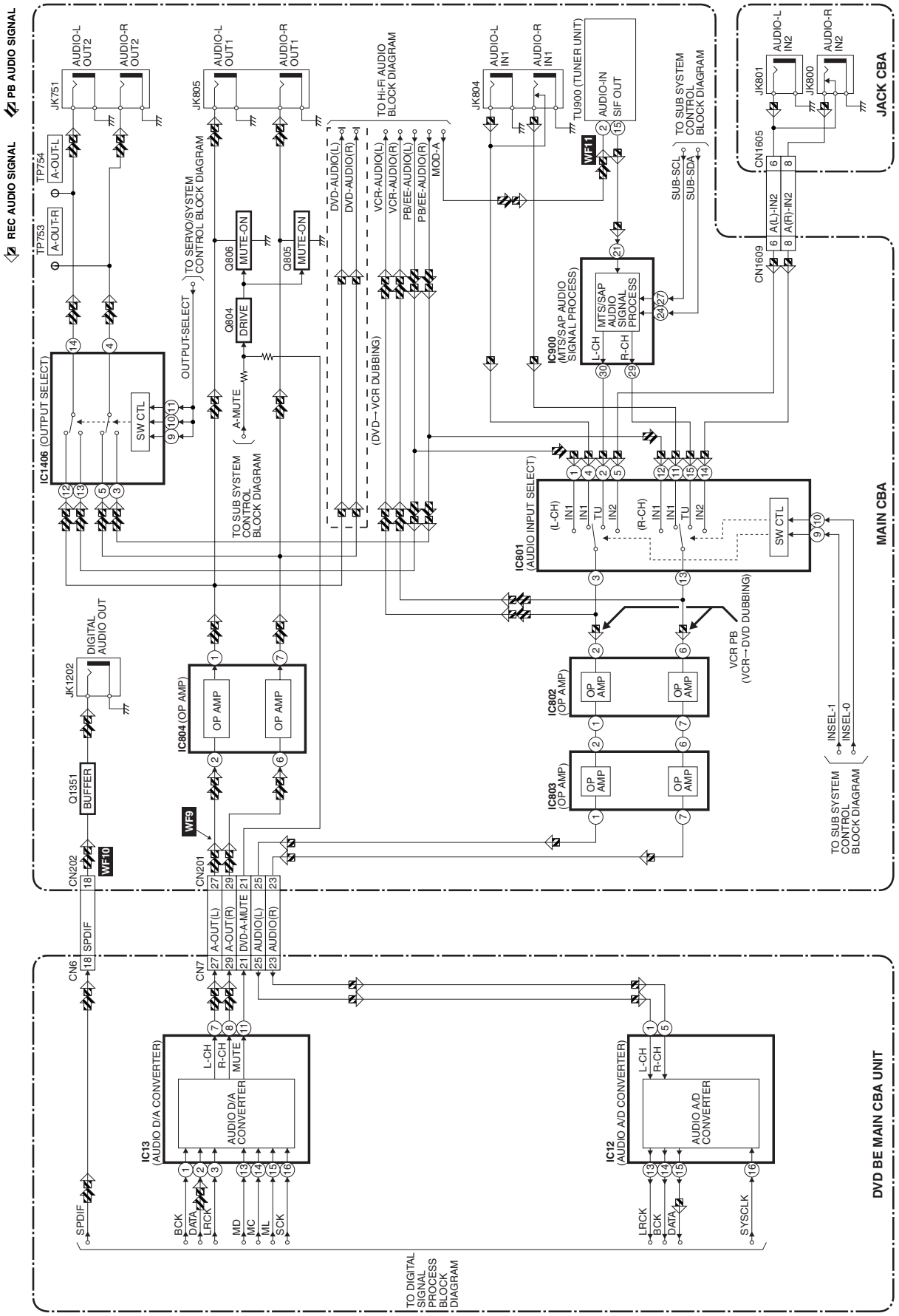
Video Output Select Block Diagram



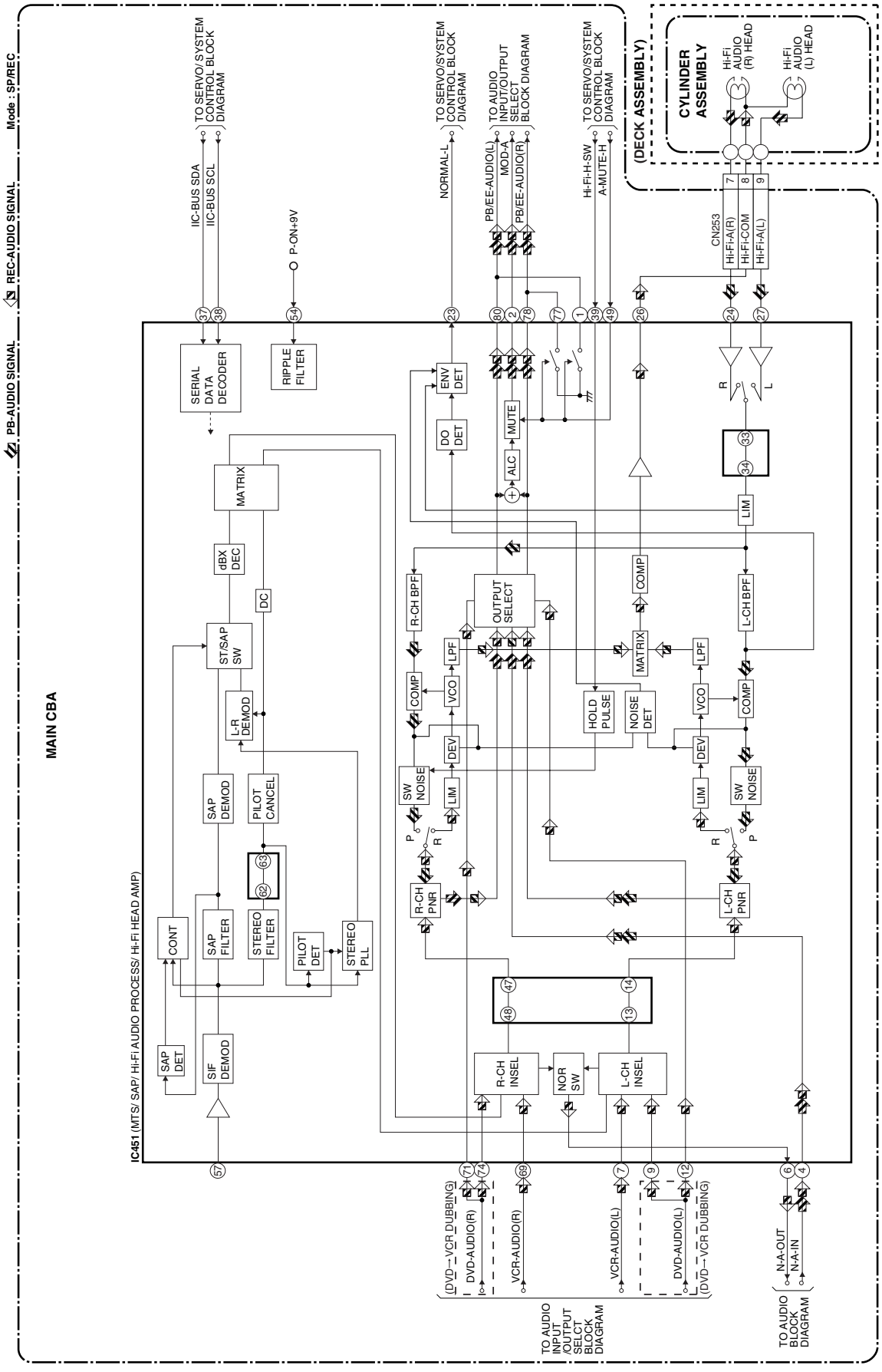
Audio Block Diagram



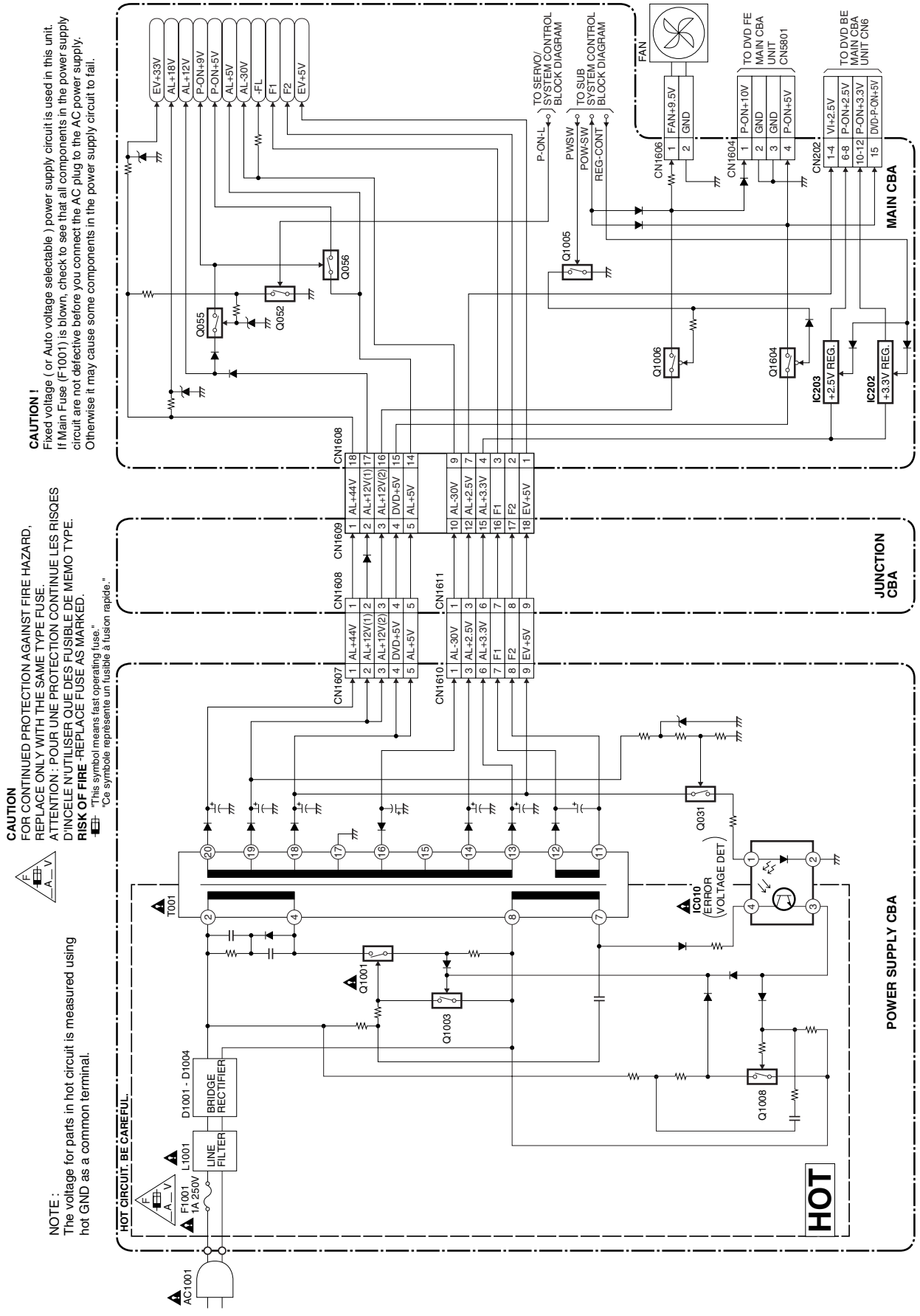
Audio Input/Output Select Block Diagram



Hi-Fi Audio Block Diagram



Power Supply Block Diagram


CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES
D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE.
RISK OF FIRE -REPLACE FUSE AS MARKED.
"This symbol means fast operating fuse."
"Ce symbole représente un fusible à fusion rapide."
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown, check to see that all components in the power supply
circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.
NOTE :
The voltage for parts in hot circuit is measured using
hot GND as a common terminal.
HOT CIRCUIT. BE CAREFUL.
HOT
POWER SUPPLY CBA
JUNCTION CBA
MAIN CBA
AC1001
F1001 1A 250V
L1001
LINE FILTER
D1001 - D1004
BRIDGE RECTIFIER
T001
IC010 (ERROR VOLTAGE DET)
Q1001
Q1003
Q1008
Q031
Q055
Q052
Q056
Q1005
Q1006
Q1604
IC203 +2.5V REG.
IC202 +3.3V REG.
FAN
EV+33V
AL+18V
AL+12V
P-ON+9V
P-ON+5V
AL+5V
AL-30V
-FL
F1
F2
EV+5V
P-ON-L
PWSW
POW-SW
REG-CONT
TO SERVO/ SYSTEM CONTROL BLOCK DIAGRAM
TO SUB SYSTEM CONTROL BLOCK DIAGRAM
CN1606 1 FAN+9.5V 2 GND
CN1604 1 P-ON+10V 2 GND 3 GND 4 P-ON+5V
TO DVD FE MAIN CBA UNIT CN5801
CN202 1-4 VI+2.5V 6-8 P-ON+2.5V 10-12 P-ON+3.3V 15 DVD-P-ON+5V
TO DVD BE MAIN CBA UNIT CN6
CN1608 1 AL+44V 2 AL+12V(1) 3 AL+12V(2) 4 DVD+5V 5 AL+5V 14 9 AL-30V 12 AL+2.5V 15 AL+3.3V 16 F1 17 F2 18 EV+5V
CN1609 1 AL+44V 2 AL+12V(1) 3 AL+12V(2) 4 DVD+5V 5 AL+5V 10 AL-30V 12 AL+2.5V 15 AL+3.3V 16 F1 17 F2 18 EV+5V
CN1607 1 AL+44V 2 AL+12V(1) 3 AL+12V(2) 4 DVD+5V 5 AL+5V
CN1610 1 AL-30V 3 AL+2.5V 6 AL+3.3V 7 F1 8 F2 9 EV+5V
CN1611 1 AL-30V 3 AL+2.5V 6 AL+3.3V 7 F1 8 F2 9 EV+5V

FUNCTION INDICATOR SYMBOLS

< VCR Section >

Note:

The following symbols will appear on the indicator panel to indicate the current mode or operation of the VCR. On-screen modes will also be momentarily displayed on the tv screen when you press the operation buttons.

Led Mode	Indicator Active
When reel and capstan mechanism is not functioning correctly	"⏏ R" is displayed on a TV screen. (Refer to Fig. 1.)
When tape loading mechanism is not functioning correctly	"⏏ T" is displayed on a TV screen. (Refer to Fig. 2.)
When cassette loading mechanism is not functioning correctly	"⏏ C" is displayed on a TV screen. (Refer to Fig. 3.)
When the drum is not working properly	"⏏ D" is displayed on a TV screen. (Refer to Fig. 4.)
P-ON+5V Power safety detection	"⏏ P" is displayed on a TV screen. (Refer to Fig. 5.)

TV screen

Note:

OSD for mechanical error will be displayed for 5 sec. after the mechanical error occurs.

When reel and capstan mechanism is not functioning correctly

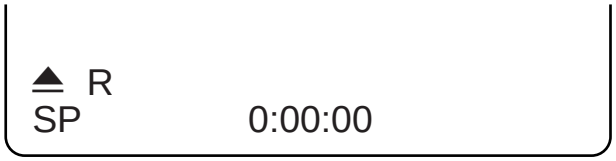


Fig. 1

When tape loading mechanism is not functioning correctly

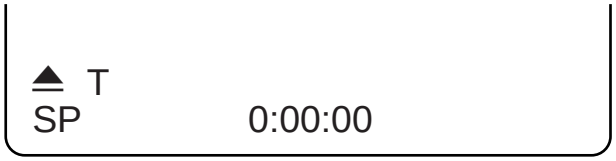


Fig. 2

When cassette loading mechanism is not functioning correctly

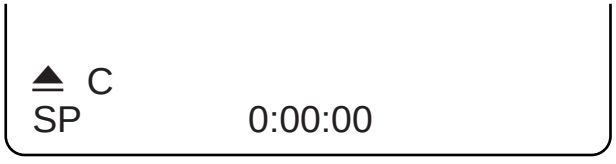


Fig. 3

When the drum is not working properly

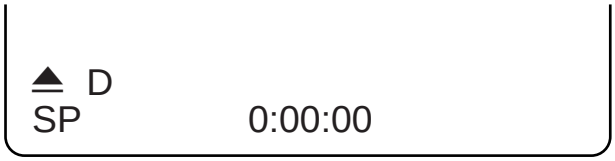


Fig. 4

P-ON+5V Power safety detection

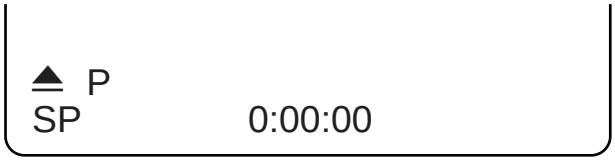
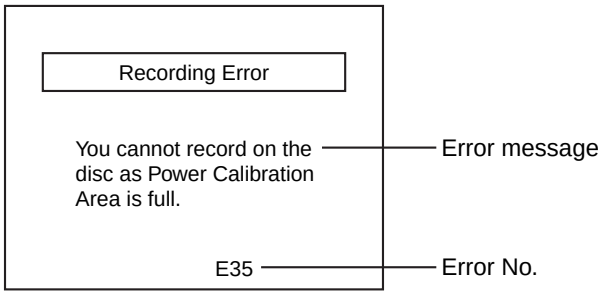


Fig. 5

< DVD Section >

Note: If an error occurs, a message with the error number appears on the screen.



Message	Solution	Error No.	Error Description	Priority
Can not record on this disc.	Insert the recordable disc, and ensure the disc status satisfies the recording reguirements.	1	An error occurs during data reading.	-
		2	There is no reply for 15 seconds in Test Unit Ready.	-
		3	Cannot write the data after trying to write three times.	-
		4	An error occurs with OPC.	-
		5	During recovery in a record.	-
		6	An error occurs even if it do recovery of a record three times.	-
		7	An error occurs in a format.	-
		8	It cannot start an encode.	-
		9	There is not NV_PCK/RDI_PCK in data doing an encode.	-
		10	An error occurs three times for 10 minutes.	-
		11	Encode Pause condition continued by normal REC condition for 10 minutes.	-
		12	Differ in an address and do not get StreamID of RDI/VIDEO.	-
		13	It is a reply that "ATAPI is not readable."	-
		14	Cannot write the data after recovering SMALL VMGI.	-
		15	Cannot write the data after DVD-R Reverse Track.	-
		16	An error occurs in Finalize Close.	-
		17	An error occurs in Rec Stop Close.	-
		18	An error occurs in PCA Full (DVD_R).	-
		19	Safety Stop occurs during editing.	-
		20	High Speed Disc.	2
		21	The disc which is not formatted.	5
		22	The disc that Disc Error occurred.	3
		23	The -R Disc of VR Mode.	6
		24	The disc except DVD-R/RW.	1
This program is not allowed to be recorded.	You cannot record copy prohibited programs.	25	During the Macrovision picture input.	11
		26	During the CGMS picture input.	12

Message	Solution	Error No.	Error Description	Priority
This program is not recordable in Video mode.	Set "DVD-RW Recording Format" to "VR mode".	27	During the CGMS picture (possible a record once) input. (Video Format Disc)	12
This program is not allowed to be recorded on this disc.	Insert a ver.1.1 CPRM compatible DVD-RW disc.	28	During the CGMS picture (possible a record once) input. (Disc which there is not for the correspondence to VR Format CPRM)	12
This disc is protected and not recordable.	Release the disc protect setting in the Disc Setting menu.	29	Disc Protected Disc.	7
Disc is full. (No area for new recording)	Insert the recordable disc with enough recording space.	30	There is no it in a space field.	5
You cannot record more than 99 titles on one disc. (The maximum is 99.)	Delete unnecessary titles.	31	It is recorded a 99 title. (Video Format Disc)	7
		32	It is recorded a 99 title. (VR Format Disc)	8
You cannot record more than 999 chapters on one disc. (The maximum is 999.)	Delete unnecessary chapter markers.	33	There is 999 number of total chapter. (VR Format Disc)	9
You cannot record on this disc as Control Information is full.	Delete unnecessary titles.	34	There is not a space to a record field of control information.	10
You cannot record on the disc as Power Calibration Area is full.	Insert a new disc.	35	PCA Full. (in REC start)	4
This disc is already finalized.	Release the finalizing for this disc.	36	It is done Finalize. (Video Format Disc)	6

SCHEMATIC DIAGRAMS / CBA'S AND TEST POINTS

Standard Notes

WARNING

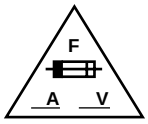
Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the mark " ⚠ " in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

Notes:

1. Do not use the part number shown on these drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since these drawings were prepared.
2. All resistance values are indicated in ohms ($K=10^3$, $M=10^6$).
3. Resistor wattages are 1/4W or 1/6W unless otherwise specified.
4. All capacitance values are indicated in μF ($P=10^{-6}$ μF).
5. All voltages are DC voltages unless otherwise specified.

LIST OF CAUTION, NOTES, AND SYMBOLS USED IN THE SCHEMATIC DIAGRAMS ON THE FOLLOWING PAGES:

1. CAUTION:



FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQES D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.

This symbol means fast operating fuse.
Ce symbole représente un fusible à fusion rapide.

2. CAUTION:

Fixed Voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

3. Note:

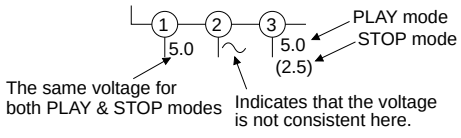
(1) Do not use the part number shown on the drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since the drawings were prepared.

(2) To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

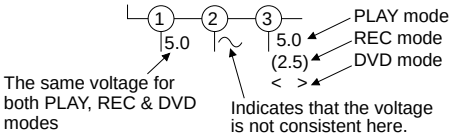
4. Mode: SP/REC

5. Voltage indications for PLAY and REC modes on the schematics are as shown below:

< DVD Section >



< VCR Section >



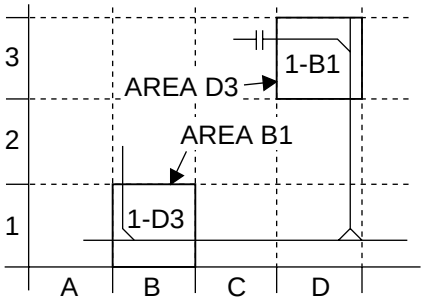
Unit: Volts

6. How to read converged lines

1-D3
Distinction Area
Line Number
(1 to 3 digits)

Examples:

1. "1-D3" means that line number "1" goes to area "D3".
2. "1-B1" means that line number "1" goes to area "B1".



7. Test Point Information

: Indicates a test point with a jumper wire across a hole in the PCB.

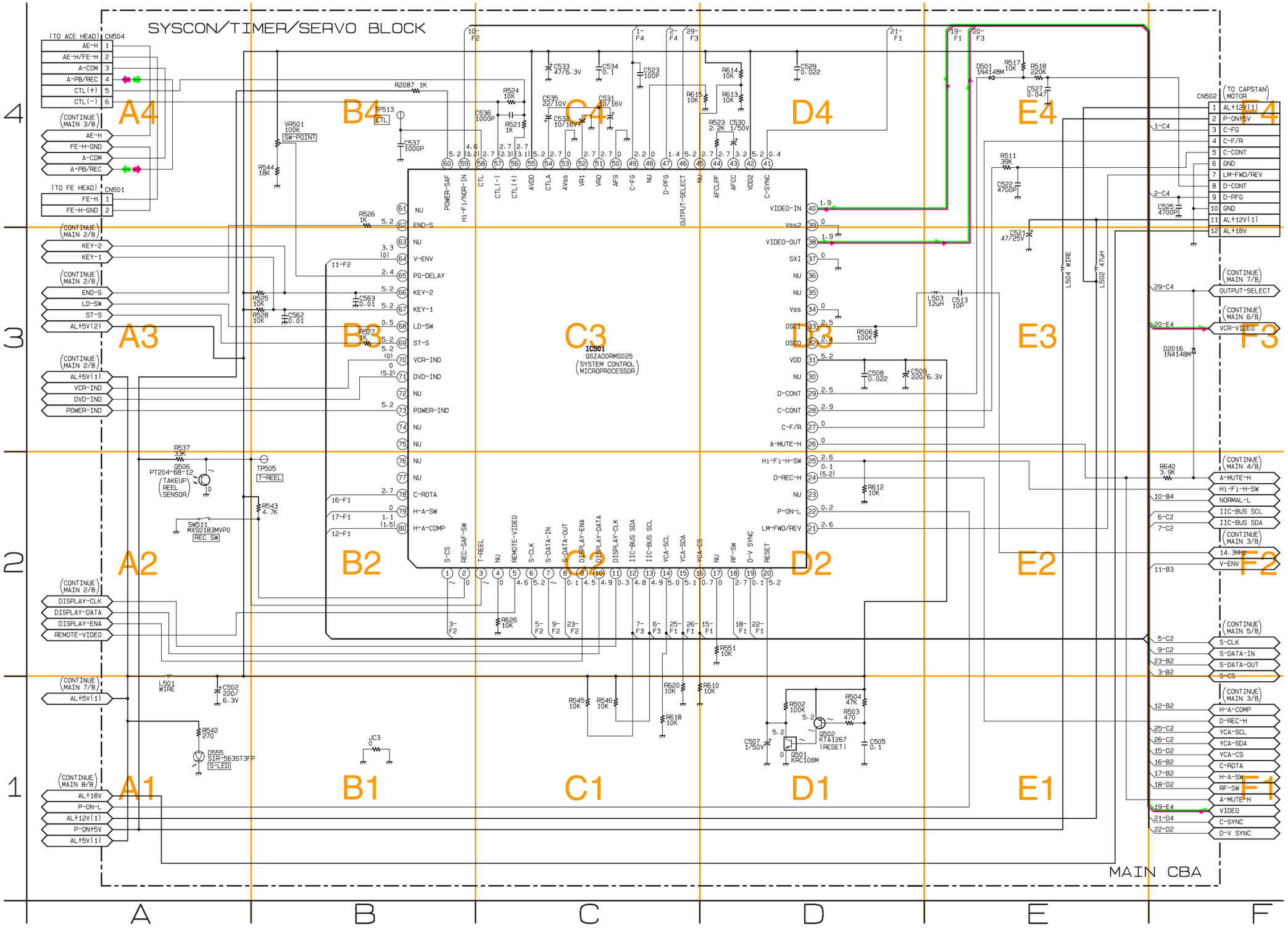
: Used to indicate a test point with a component lead on foil side.

: Used to indicate a test point with no test pin.

: Used to indicate a test point with a test pin.

Main 1/8 Schematic Diagram < VCR Section >

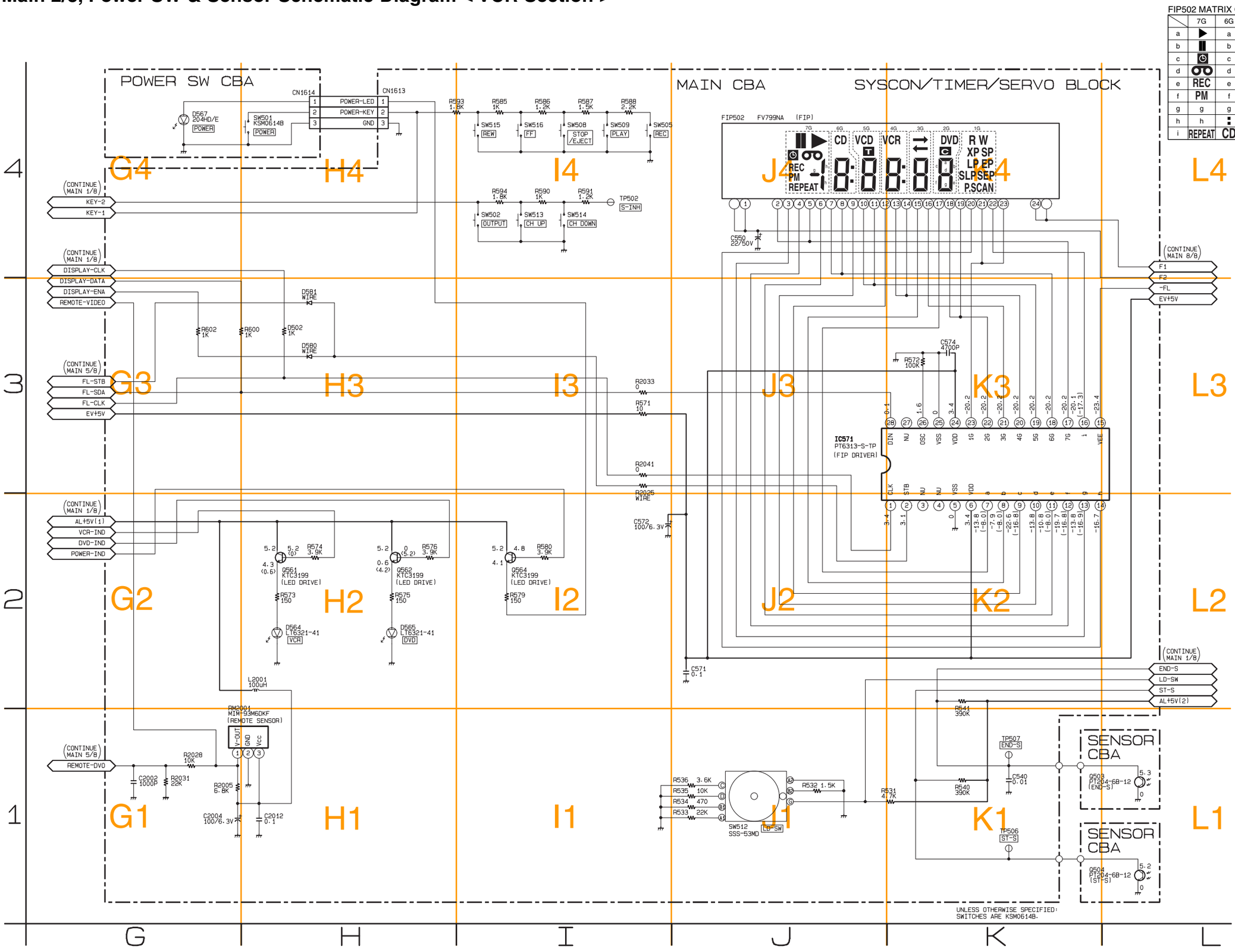
REC VIDEO SIGNAL
REC AUDIO SIGNAL
PB VIDEO SIGNAL
PB AUDIO SIGNAL



MAIN 1/8

Ref No.	Position
IC	
IC501	C-3
TRANSISTORS	
Q501	D-1
Q502	D-1
Q506	A-2
CONNECTORS	
CN502	F-4
CN504	A-4
VARIABLE RESISTOR	
VR501	B-4
TEST POINTS	
TP505	B-2
TP513	B-4

Main 2/8, Power SW & Sensor Schematic Diagram < VCR Section >



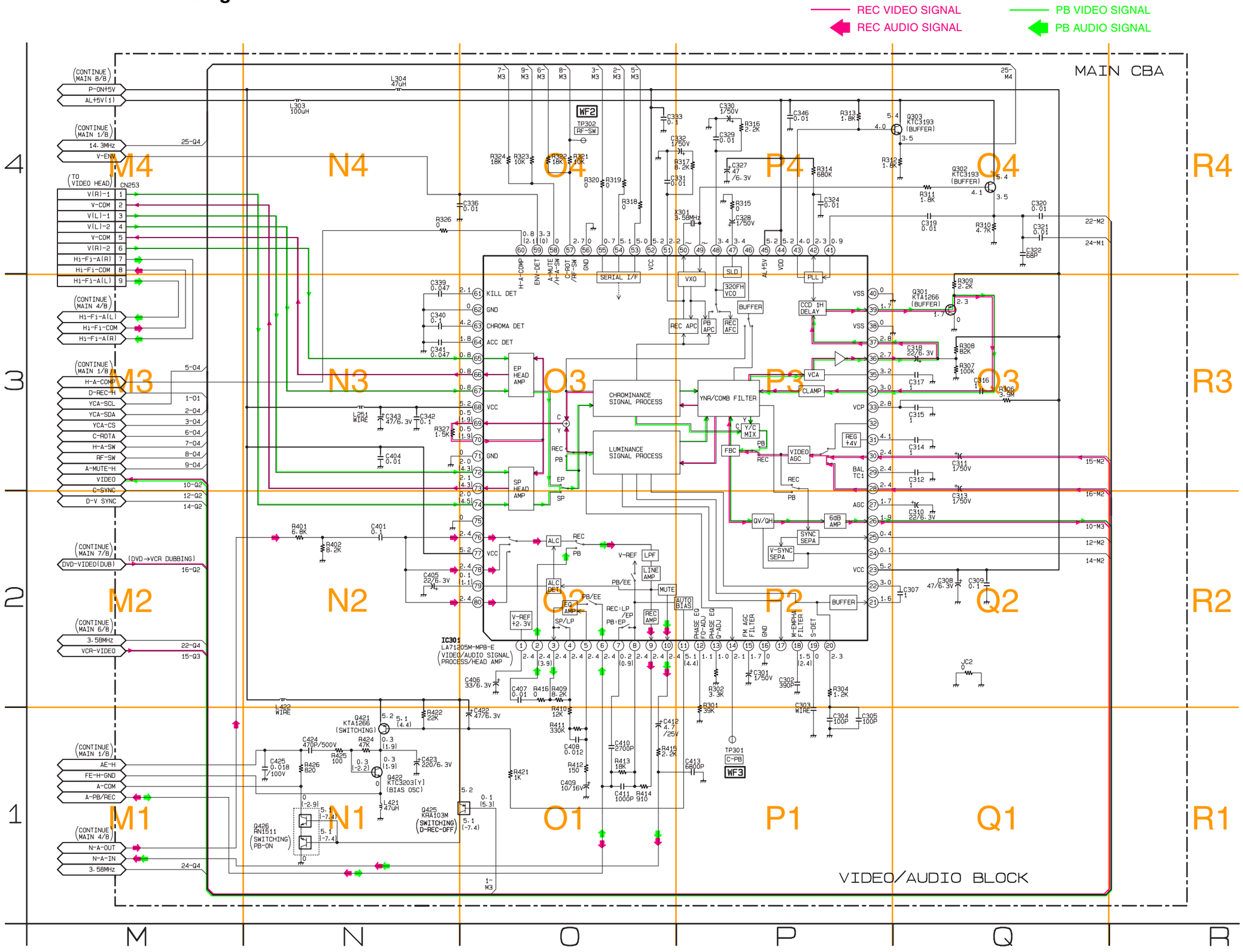
FIP502 MATRIX CHART

	7G	6G	5G	4G	3G	2G	1G
a	▶	a	a	a	a	a	XP
b	❚❚	b	b	b	b	b	SP
c	◷	c	c	c	c	c	LP
d	∞	d	d	d	d	d	EP
e	REC	e	e	e	e	e	SLP
f	PM	f	f	f	f	f	SEP
g	g	g	g	g	g	g	P.SCAN
h	h	:	T	:	⇄	C	W
i	REPEAT	CD	VCD	VCR	⇇	DVD	R

MAIN 2/8

Ref No.	Position
IC	
IC571	K-3
TRANSISTORS	
Q561	H-2
Q562	H-2
Q564	I-2
CONNECTORS	
CN1613	H-4
TEST POINTS	
TP502	I-4
TP506	K-1
TP507	K-1

Main 3/8 Schematic Diagram < VCR Section >



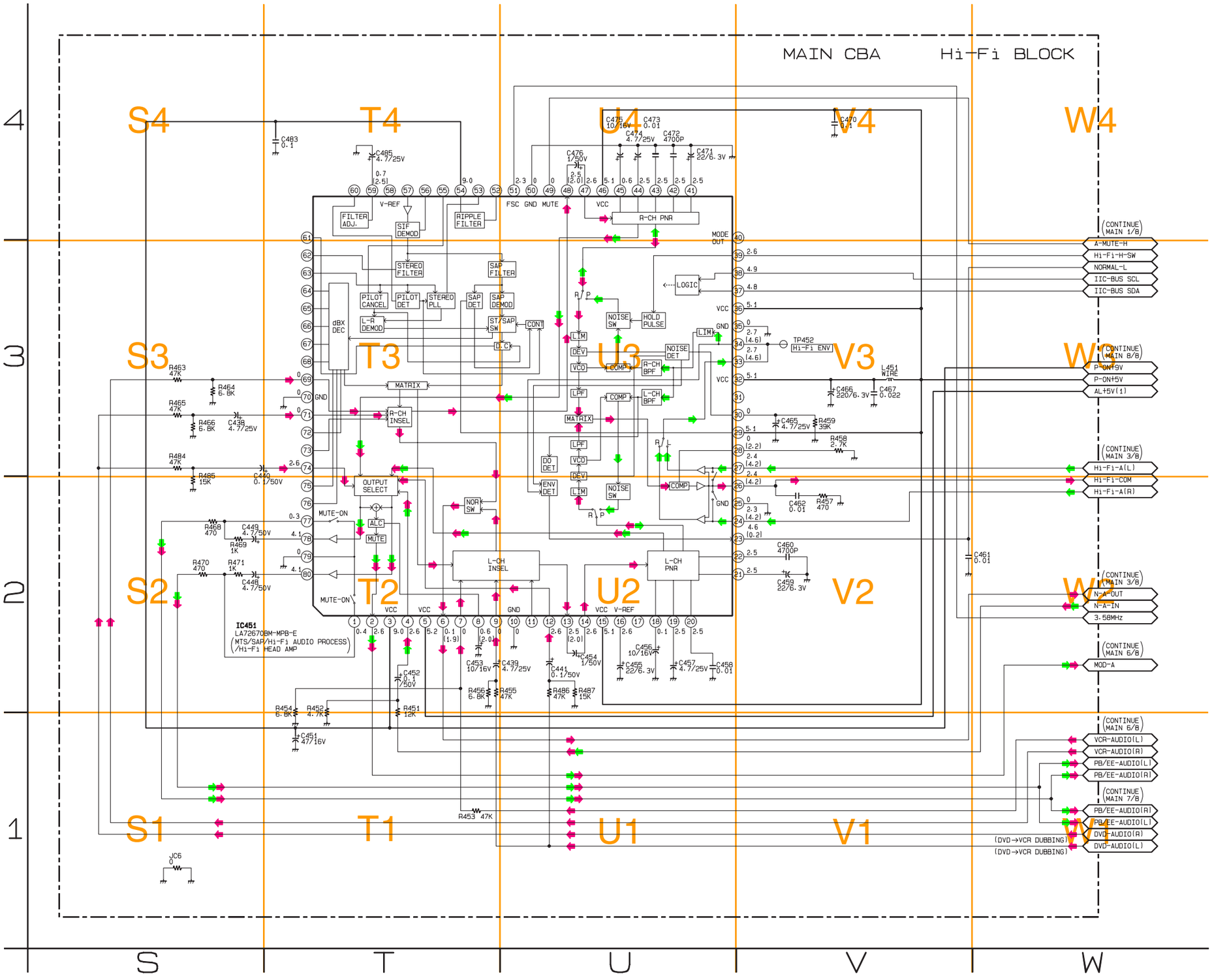
MAIN 3/8

Ref No.	Position
IC	
IC301	O-2
TRANSISTORS	
Q301	Q-3
Q302	Q-4
Q303	Q-4
Q421	N-1
Q422	N-1
Q425	N-1
Q426	N-1
CONNECTOR	
CN253	M-4
TEST POINTS	
TP301	P-1
TP302	O-4

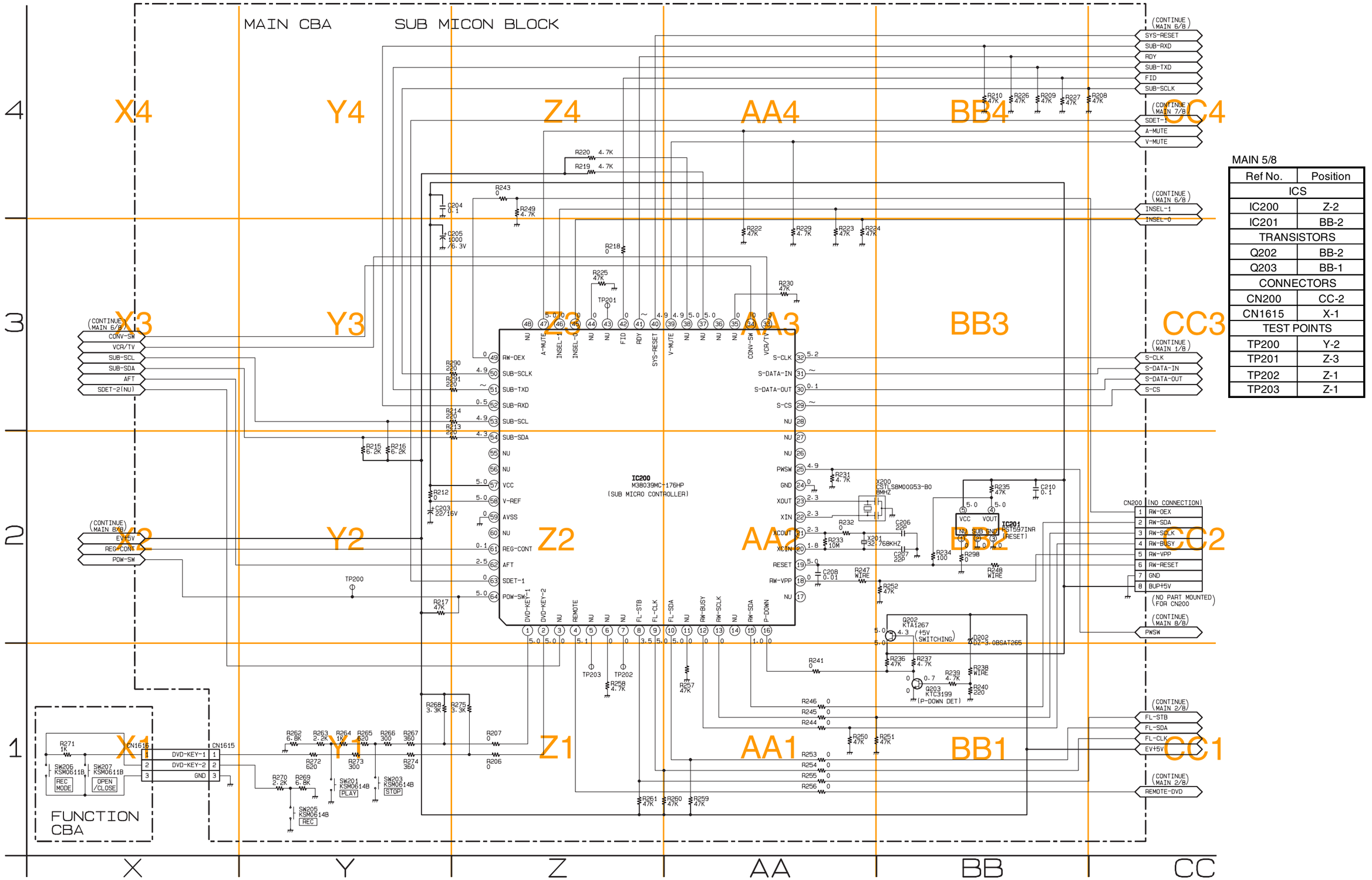
Main 4/8 Schematic Diagram < VCR Section >

REC Audio Signal

PB Audio Signal



Main 5/8 & Function Schematic Diagram < VCR Section >



MAIN 5/8

Ref No.	Position
ICS	
IC200	Z-2
IC201	BB-2
TRANSISTORS	
Q202	BB-2
Q203	BB-1
CONNECTORS	
CN200	CC-2
CN1615	X-1
TEST POINTS	
TP200	Y-2
TP201	Z-3
TP202	Z-1
TP203	Z-1

Main 6/8 Schematic Diagram < VCR Section >

REC VIDEO SIGNAL
REC AUDIO SIGNAL
PB VIDEO SIGNAL
PB AUDIO SIGNAL

MAIN CBA
TUNER/MTS BLOCK

TU900 UTUNNTUS9026 (TUNER UNIT)
AUDIO-IN | CH SW | +5V | CONT | VIDEO IN | NU | X'TAL | NU | SCL | SDA | AFT OUT | NU | SIF OUT | BT(+30V) | NU | VIDEO OUT

IC900 AN5832SA-E1 (MTS/SAP AUDIO SIGNAL PROCESS)
IC805 TC4052BF (VIDEO INPUT SELECT)
IC800 MM1657XJBE (VIDEO INPUT SELECT)
IC801 TC4052BF (AUDIO INPUT SELECT)
IC802 NJM4558D (OP AMP)
IC803 NJM2100D (OP AMP)
Q800 KTC3199 (INVERTER)
Q801 KTC3199 (INVERTER)
Q200 KTC3199 (BUFFER)
Q201 KTC3199 (BUFFER)

(CONTINUE MAIN 4/8) MOD-A
(CONTINUE MAIN 7/8) V-REF
(CONTINUE MAIN 5/8) CONV-SW, VCR/TV, SUB-SCL, SUB-SDA, AFT, SDET-2(NU)
(CONTINUE MAIN 8/8) P-ON+10V, EV+33V, DVD-P-ON+5V
(CONTINUE MAIN 5/8) INSEL-1, INSEL-0
(CONTINUE MAIN 3/8) 3.58MHz, VCR-VIDEO
(CONTINUE MAIN 7/8) MOD-V, C-IN, Y-IN, PB/EE-VIDEO
(CONTINUE MAIN 1/8) VCR-VIDEO
(TO JACK CBA CN1605) CN1609: C-IN2, Y-IN2, SDET-2(NU), V-IN2, GND, A(L)-IN2, GND, A(R)-IN2
VIDEO-IN1, AUDIO-L IN1, AUDIO-R IN1 (JKB04)
(VCR→DVD DUBBING)
VCR PB (VCR→DVD DUBBING)

(CONTINUE MAIN 4/8) VCR-AUDIO(L), VCR-AUDIO(R), PB/EE-AUDIO(L), PB/EE-AUDIO(R)
(CONTINUE MAIN 7/8) VIDEO-C, VIDEO-Y, VIDEO-Cb, VIDEO-Cr
(CONTINUE MAIN 5/7) SYS-RESET, SUB-RXD, RDY, SUB-TXD, FID, SUB-SCLK
(TO DVD BE MAIN CBA UNIT CN7) CN201: 3 SUB-SCLK, 4 FID, 5 SUB-TXD, 6 RDY, 7 SUB-RXD, 8 SYS-RESET, 9 GND, 10 VIDEO-Cr, 11 GND, 12 VIDEO-Cb, 13 GND, 14 VIDEO-Y, 15 GND, 16 VIDEO-C, 17 GND, 18 VIDEO-Y, 19 GND, 20 VIDEO-C, 21 DVD-A-MUTE, 22 GND, 23 AUDIO(R), 24 GND, 25 AUDIO(L), 26 GND, 27 A-OUT(L), 28 GND, 29 A-OUT(R), 30 AUDIO+5V
(CONTINUE MAIN 7/8) AUDIO+5V, A-OUT(R), A-OUT(L), DVD-A-MUTE

WF11 WF12 WF13 WF14 WF15 WF8 WF7 WF4 WF5 WF9

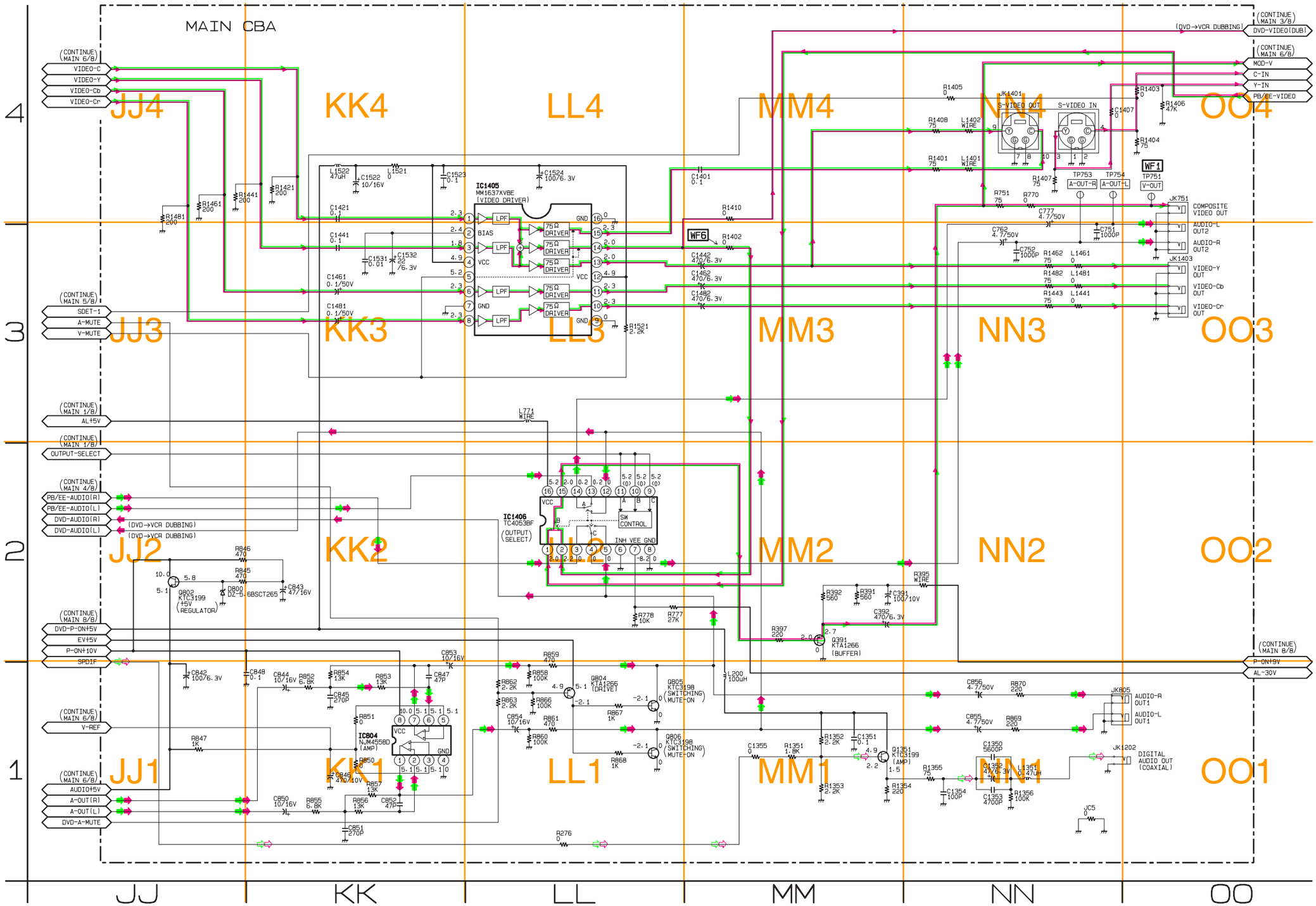
DD4 EE4 FF4 GG4 HH4 II4
DD3 EE3 FF3 GG3 HH3 II3
DD2 EE2 FF2 GG2 HH2 II2
DD1 EE1 FF1 GG1 HH1 II1

MAIN 6/8

Ref No.	Position
ICS	
IC800	EE-2
IC801	GG-2
IC802	GG-1
IC803	HH-1
IC805	EE-3
IC900	FF-3
TRANSISTORS	
Q200	GG-1
Q201	GG-1
Q800	FF-2
Q801	FF-3
CONNECTORS	
CN201	II-2
CN1609	DD-1

Main 7/8 Schematic Diagram < VCR Section >

REC VIDEO SIGNAL
REC AUDIO SIGNAL
REC Audio Signal (Digital)
PB VIDEO SIGNAL
PB AUDIO SIGNAL
PB Audio Signal (Digital)



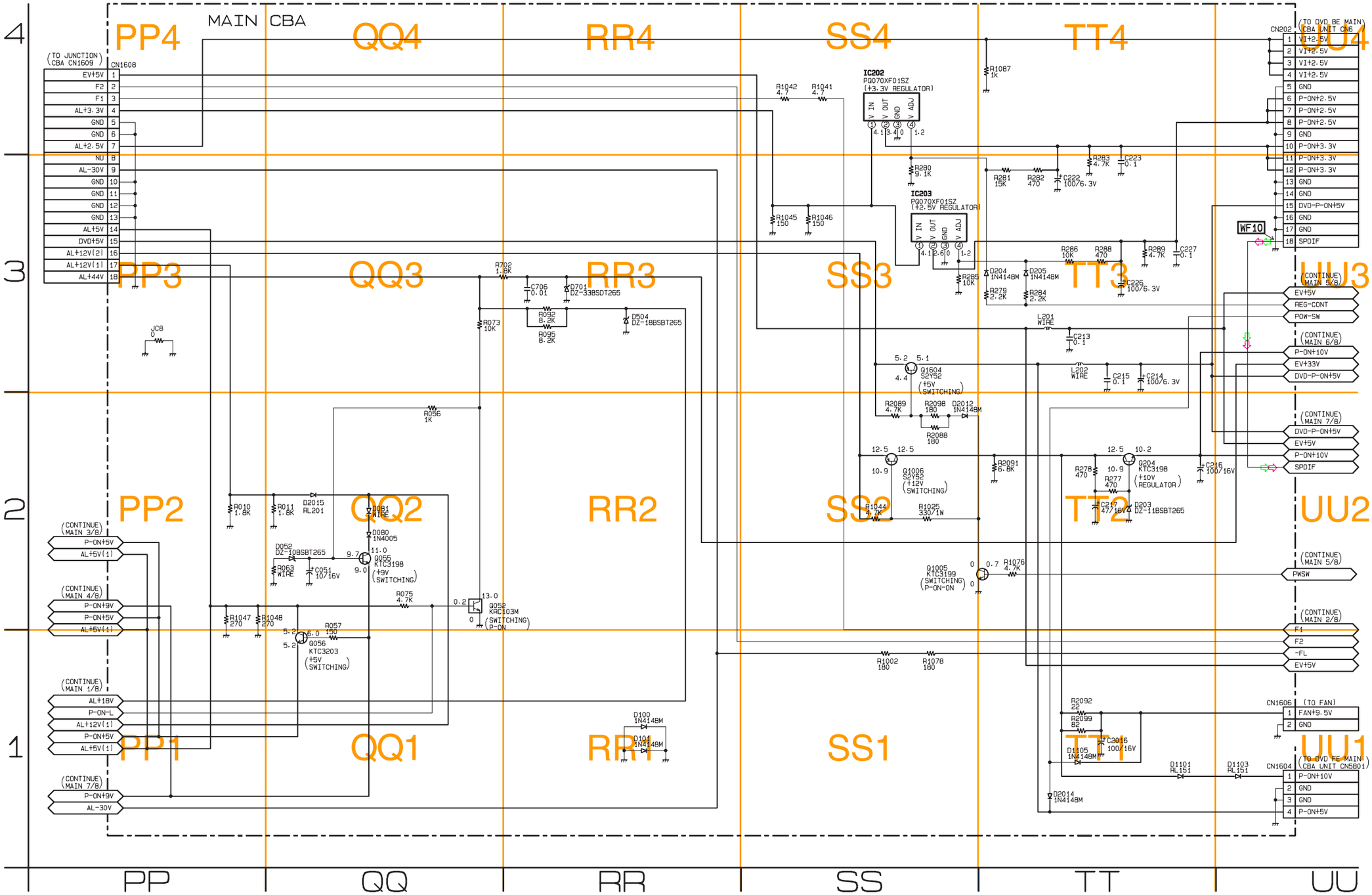
MAIN 7/8

Ref No.	Position
ICS	
IC804	KK-1
IC1405	LL-4
IC1406	LL-2
TRANSISTORS	
Q391	MM-2
Q802	JJ-2
Q804	LL-1
Q805	LL-1
Q806	LL-1
Q1351	MM-1
TEST POINTS	
TP751	OO-4
TP753	NN-4
TP754	NN-4

Main 8/8 Schematic Diagram < VCR Section >

REC Audio Signal (Digital)

PB Audio Signal (Digital)



MAIN 8/8

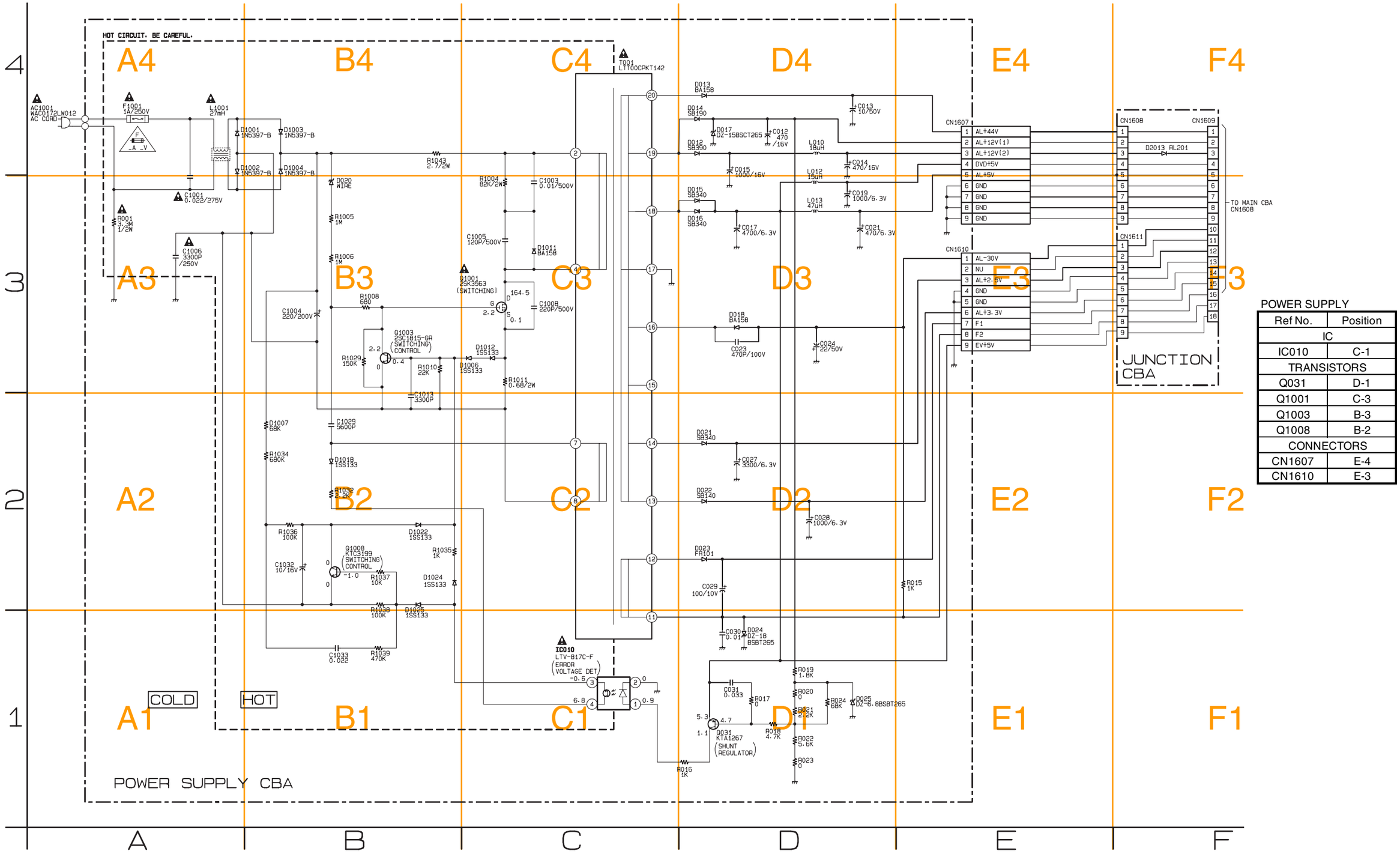
Ref No.	Position
ICS	
IC202	SS-4
IC203	SS-3
TRANSISTORS	
Q052	QQ-2
Q055	QQ-2
Q056	QQ-1
Q204	TT-2
Q1005	TT-2
Q1006	SS-2
Q1604	SS-3
CONNECTORS	
CN202	UU-4
CN1604	UU-1
CN1606	UU-1
CN1608	PP-4

Power Supply Schematic Diagram < VCR Section >

CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit. If Main Fuse (F1001) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES D'INCELE N'UTILISER QUE DES FUSIBLE DE MÊME TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.
"This symbol means fast operating fuse."
"Ce symbole représente un fusible à fusion rapide."

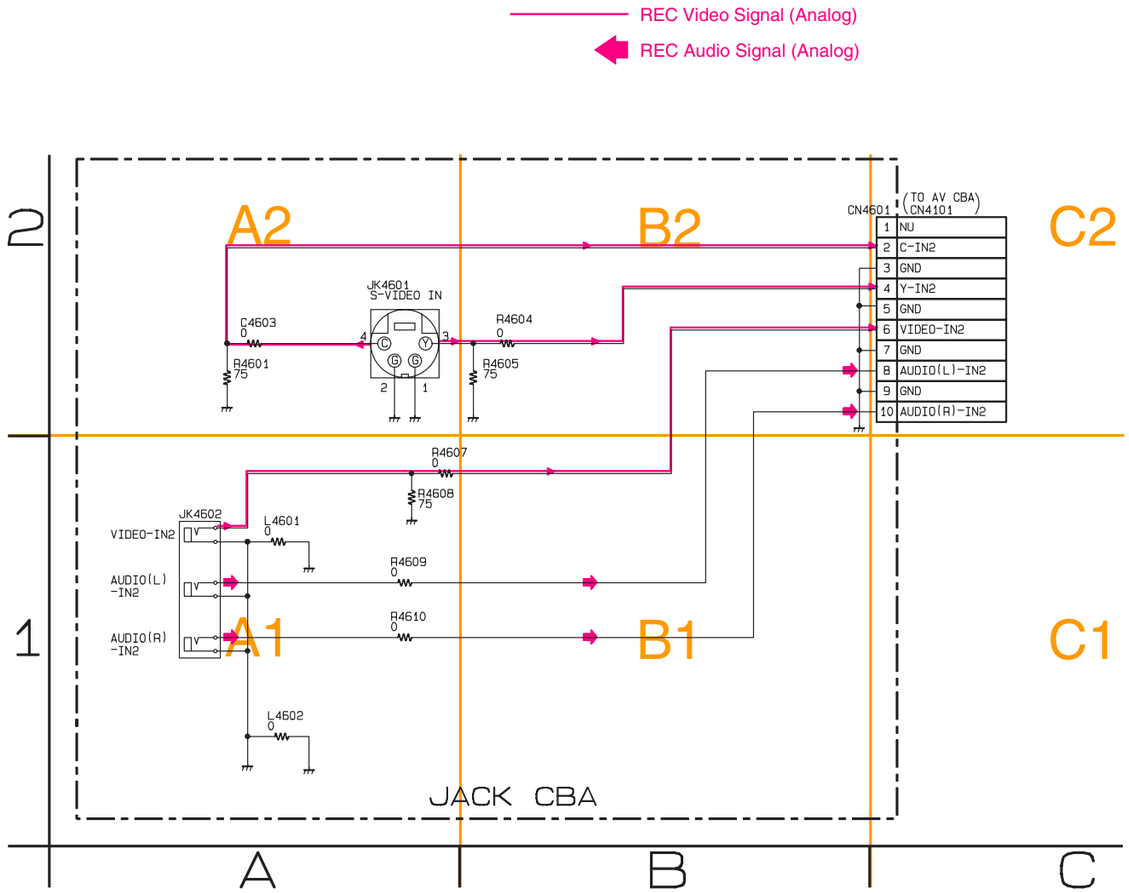
NOTE :
The voltage for parts in hot circuit is measured using hot GND as a common terminal.



POWER SUPPLY

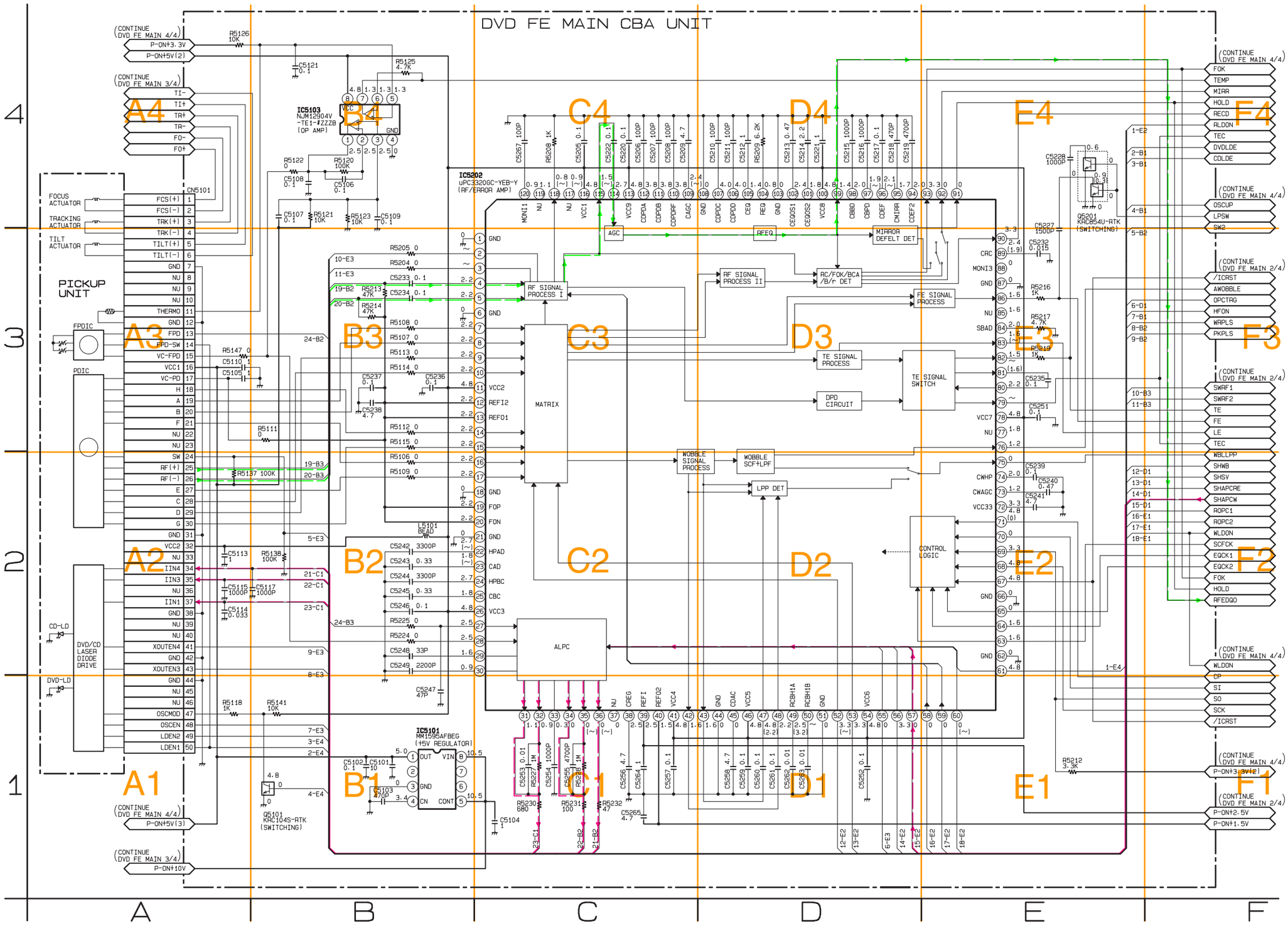
Ref No.	Position
IC	
IC010	C-1
TRANSISTORS	
Q031	D-1
Q1001	C-3
Q1003	B-3
Q1008	B-2
CONNECTORS	
CN1607	E-4
CN1610	E-3

Jack Schematic Diagram < VCR Section >



DVD FE Main 1/4 Schematic Diagram < DVD Section >

REC Video+Audio Signal (Digital) PB Video+Audio Signal (Digital)

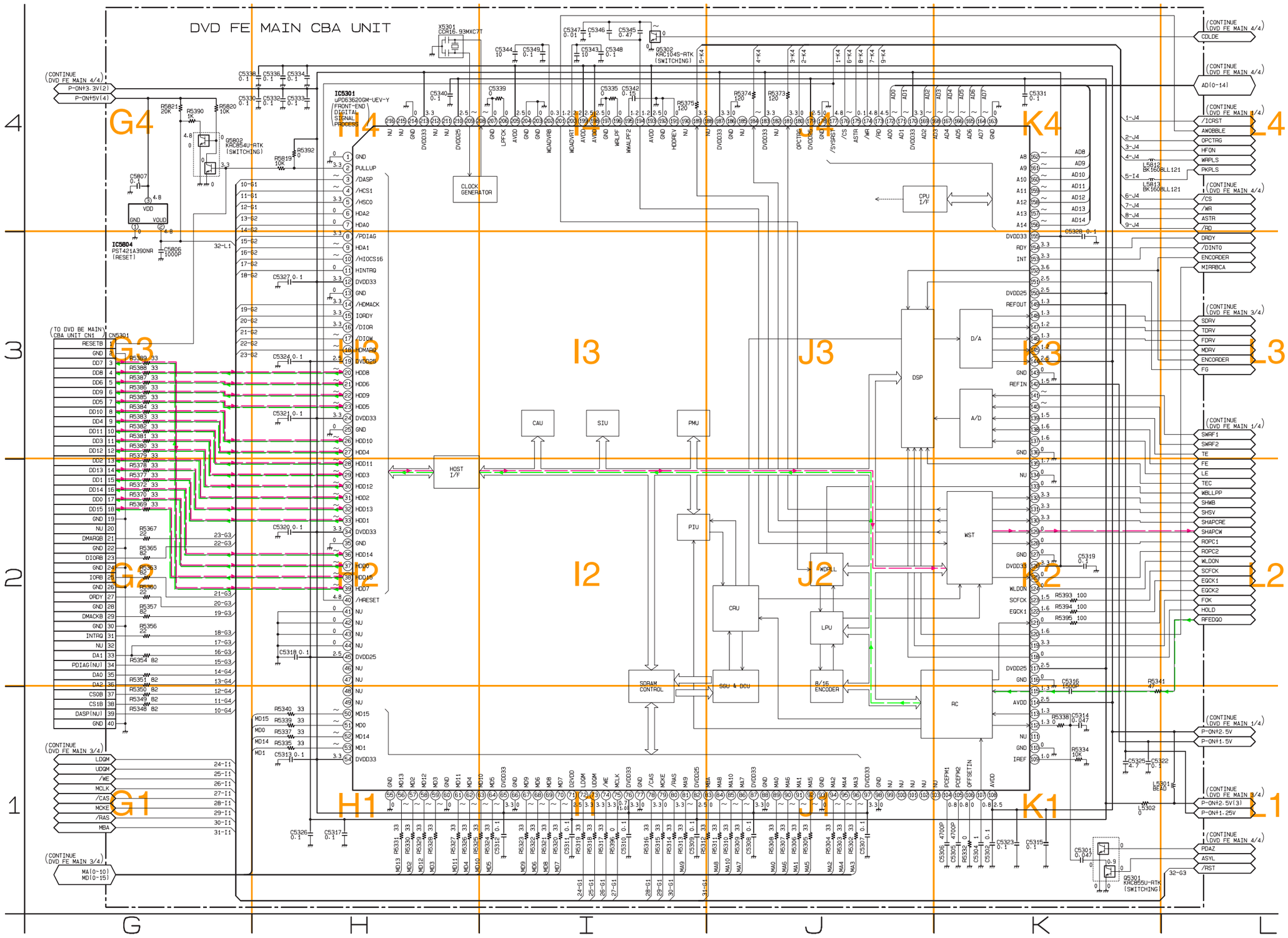


DVD FE MAIN 1/4

Ref No.	Position
ICS	
IC5101	B-1
IC5103	B-4
IC5202	C-4
TRANSISTORS	
Q5101	B-1
Q5201	E-4
CONNECTOR	
CN5101	A-4

DVD FE Main 2/4 Schematic Diagram < DVD Section >

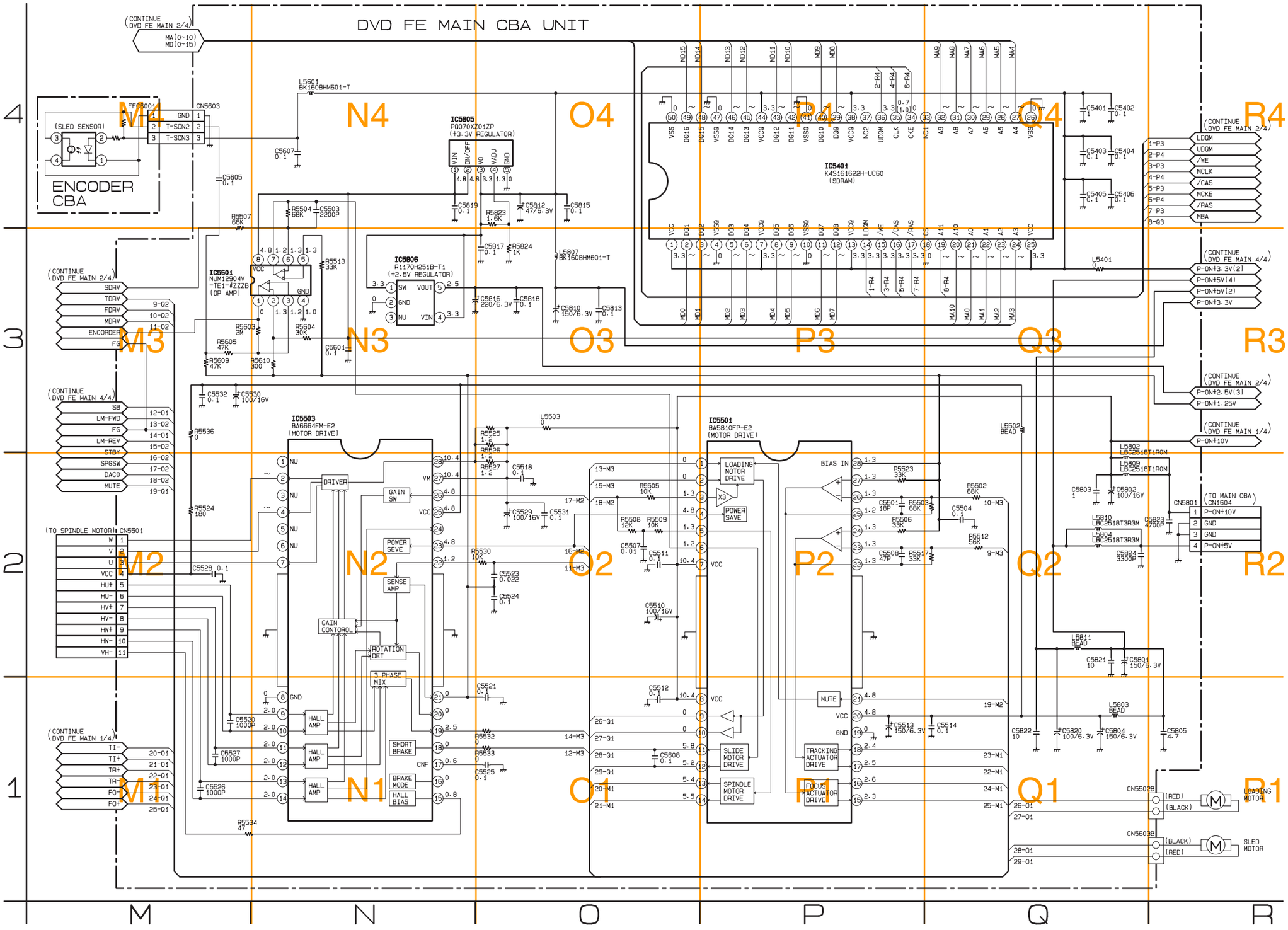
REC Video+Audio Signal (Digital) PB Video+Audio Signal (Digital)



DVD FE MAIN 2/4

Ref No.	Position
ICS	
IC5301	H-4
IC5804	G-4
TRANSISTORS	
Q5301	K-1
Q5302	I-4
Q5802	G-4
CONNECTOR	
CN5301	G-3

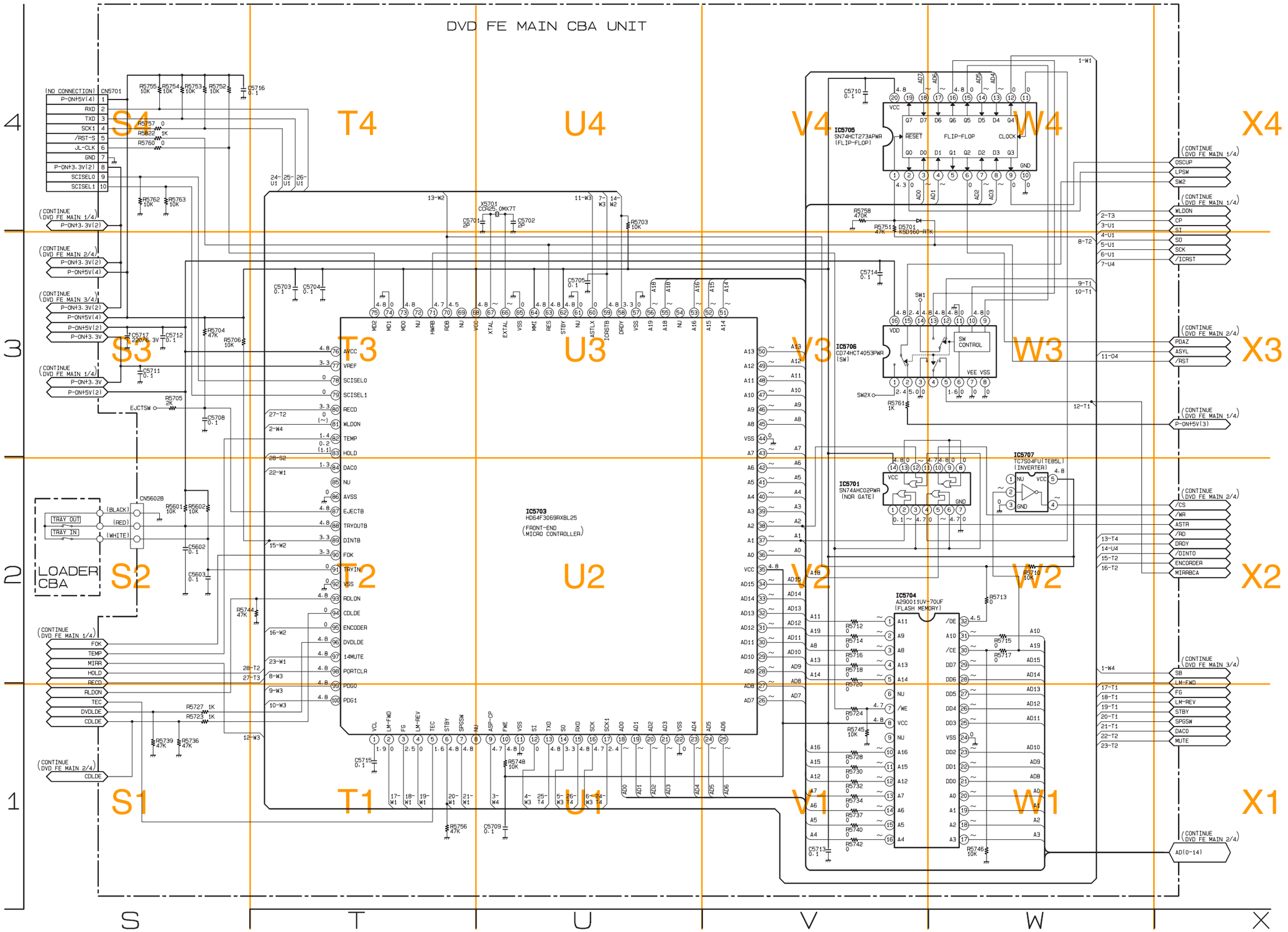
DVD FE Main 3/4 Schematic Diagram < DVD Section >



DVD FE MAIN 3/4

Ref No.	Position
ICS	
IC5401	P-4
IC5501	P-3
IC5503	N-3
IC5601	N-3
IC5805	N-4
IC5806	N-3
CONNECTORS	
CN5501	M-2
CN5502B	R-1
CN5603	M-4
CN5603B	R-1
CN5801	R-2

DVD FE Main 4/4 Schematic Diagram < DVD Section >



DVD FE MAIN 4/4

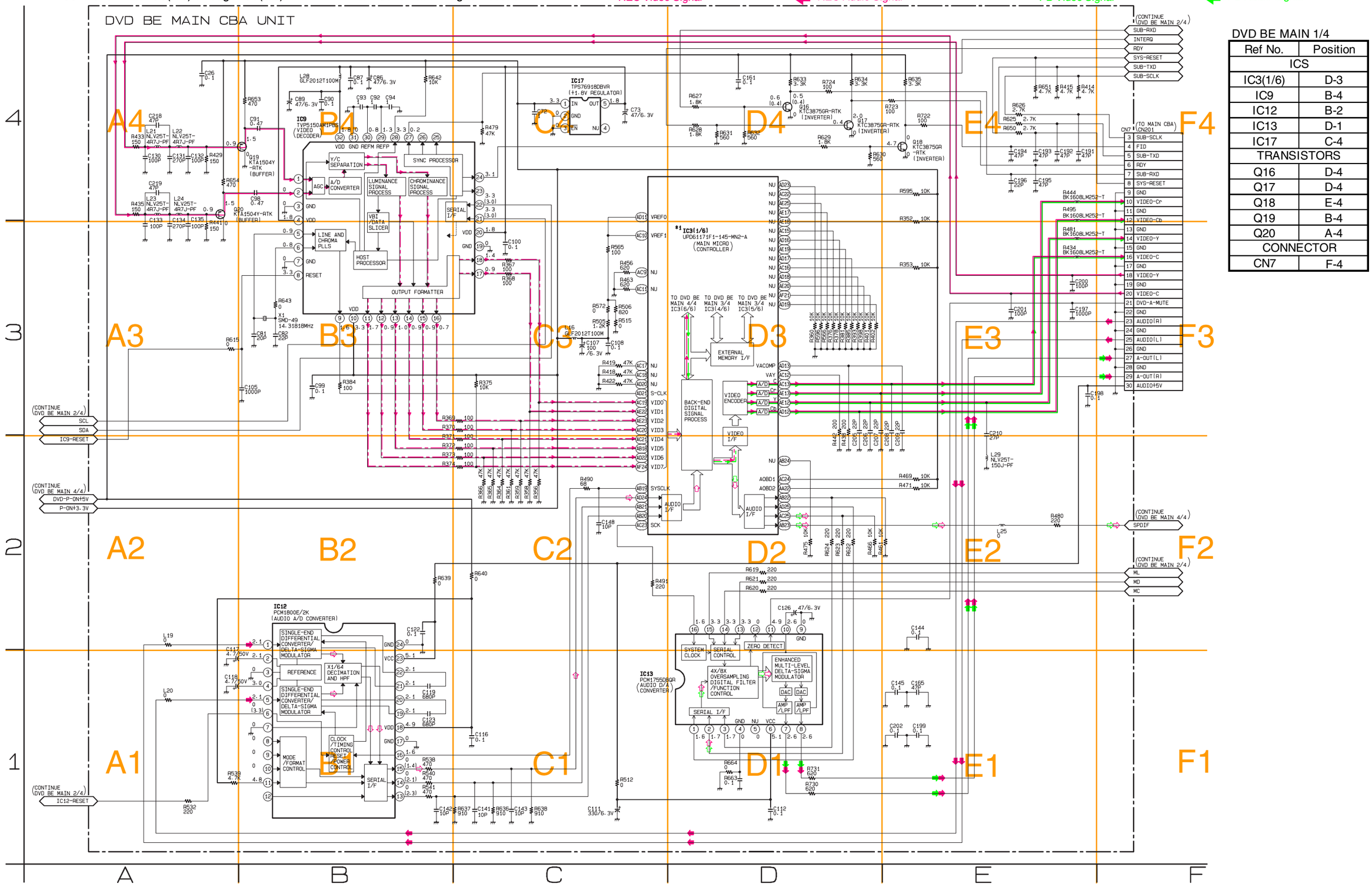
Ref No.	Position
ICS	
IC5701	V-2
IC5703	U-2
IC5704	V-2
IC5705	V-4
IC5706	V-3
IC5707	W-2
CONNECTORS	
CN5701	S-4
CN5602B	S-2

DVD BE Main 1/4 Schematic Diagram < DVD Section >

***1 Note:**

1. The order of pins shown are different from that of IC3 itself.
2. IC3 is shown as IC3(1/6) through IC3(6/6) in DVD BE Main Schematic Diagram section.

REC Video+Audio Signal (Digital)
REC Video Signal (Digital)
REC Video Signal
REC Audio Signal (Digital)
REC Audio Signal
PB Video+Audio Signal (Digital)
PB Video Signal (Digital)
PB Video Signal
PB Audio Signal (Digital)
PB Audio Signal



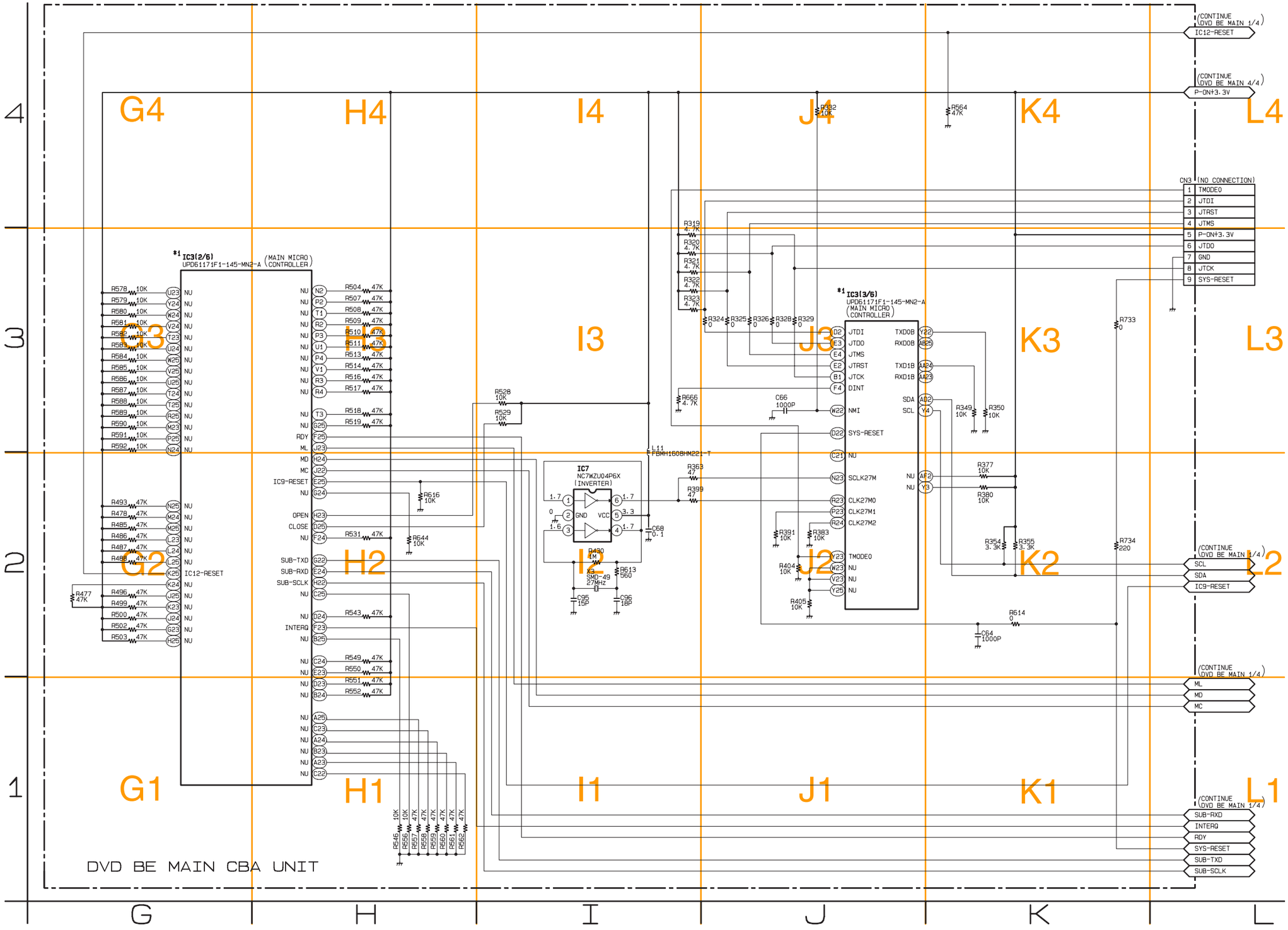
DVD BE MAIN 1/4

Ref No.	Position
ICS	
IC3(1/6)	D-3
IC9	B-4
IC12	B-2
IC13	D-1
IC17	C-4
TRANSISTORS	
Q16	D-4
Q17	D-4
Q18	E-4
Q19	B-4
Q20	A-4
CONNECTOR	
CN7	F-4

DVD BE Main 2/4 Schematic Diagram < DVD Section >

***1 Note:**

1. The order of pins shown are different from that of IC3 itself.
2. IC3 is shown as IC3(1/6) through IC3(6/6) in DVD BE Main Schematic Diagram section.



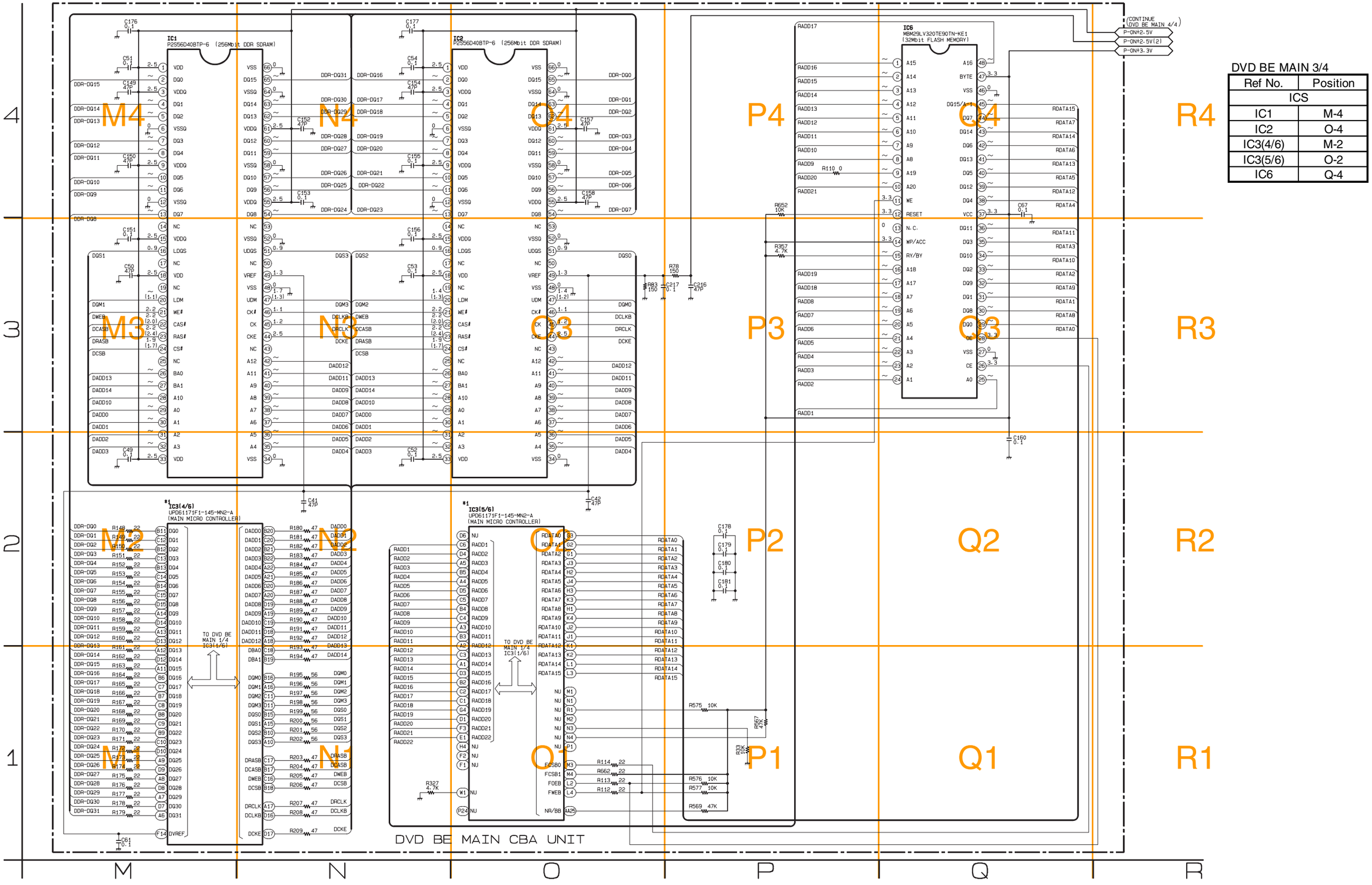
DVD BE MAIN 2/4

Ref No.	Position
ICS	
IC3(2/6)	G-3
IC3(3/6)	J-3
IC7	I-2
CONNECTOR	
CN3	L-4

DVD BE Main 3/4 Schematic Diagram < DVD Section >

***1 Note:**

1. The order of pins shown are different from that of IC3 itself.
2. IC3 is shown as IC3(1/6) through IC3(6/6) in DVD BE Main Schematic Diagram section.



DVD BE MAIN 3/4

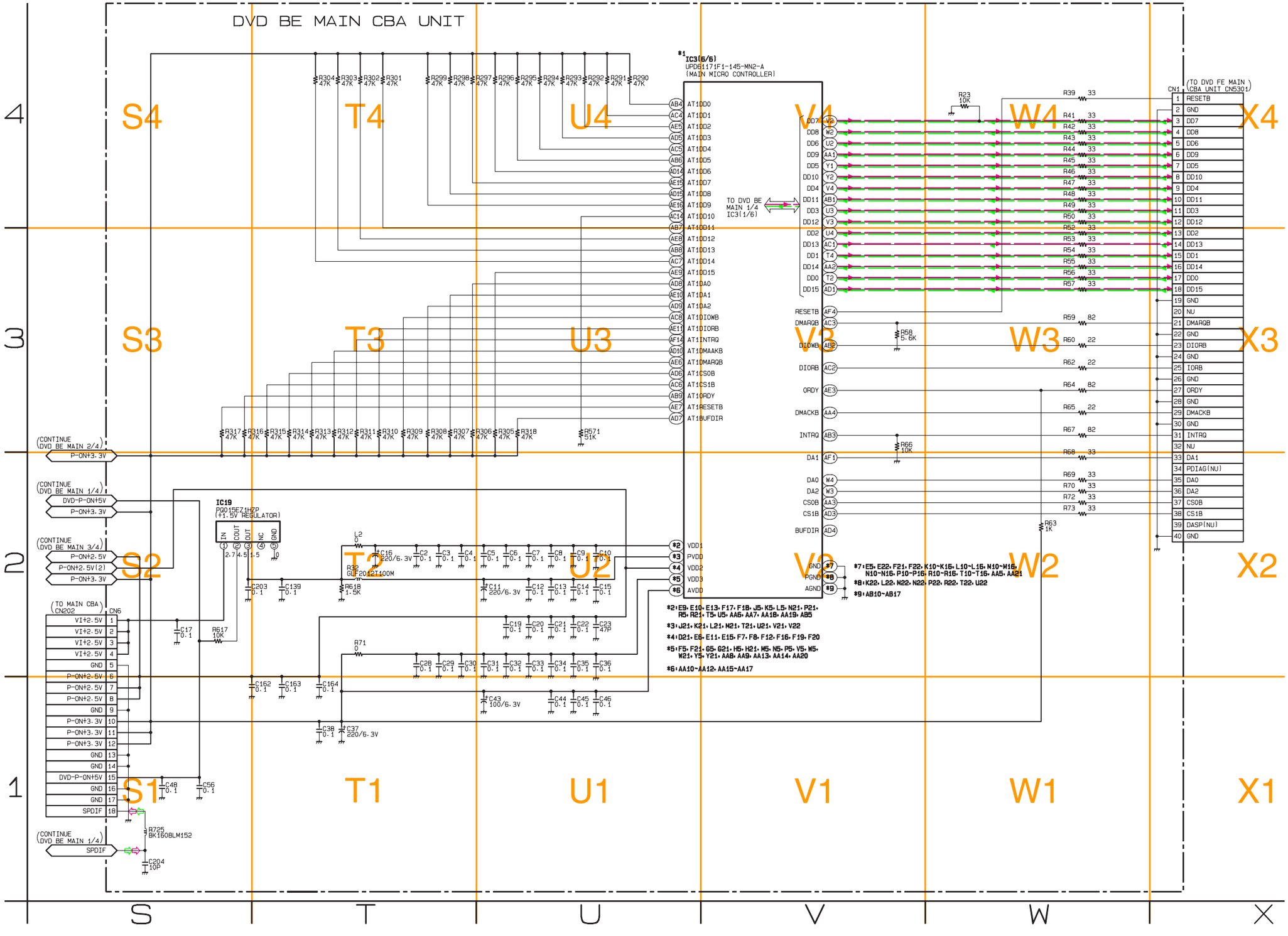
Ref No.	Position
ICS	
IC1	M-4
IC2	O-4
IC3(4/6)	M-2
IC3(5/6)	O-2
IC6	Q-4

DVD BE Main 4/4 Schematic Diagram < DVD Section >

***1 Note:**

1. The order of pins shown are different from that of IC3 itself.
2. IC3 is shown as IC3(1/6) through IC3(6/6) in DVD BE Main Schematic Diagram section.

REC Video+Audio Signal (Digital) PB Video+Audio Signal (Digital)

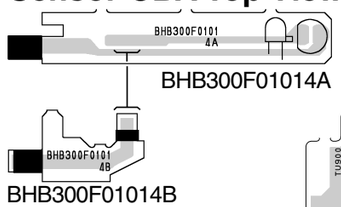


DVD BE MAIN 4/4

Ref No.	Position
ICS	
IC3(6/6)	V-4
IC19	S-2
CONNECTOR	
CN1	X-4
CN6	S-2

Main CBA Top View

Sensor CBA Top View



WF1
TP751
V-OUT

TO SENSOR CBA
(START-SENSOR)

TO SENSOR CBA
(END-SENSOR)

WF3
TP301
C-PB

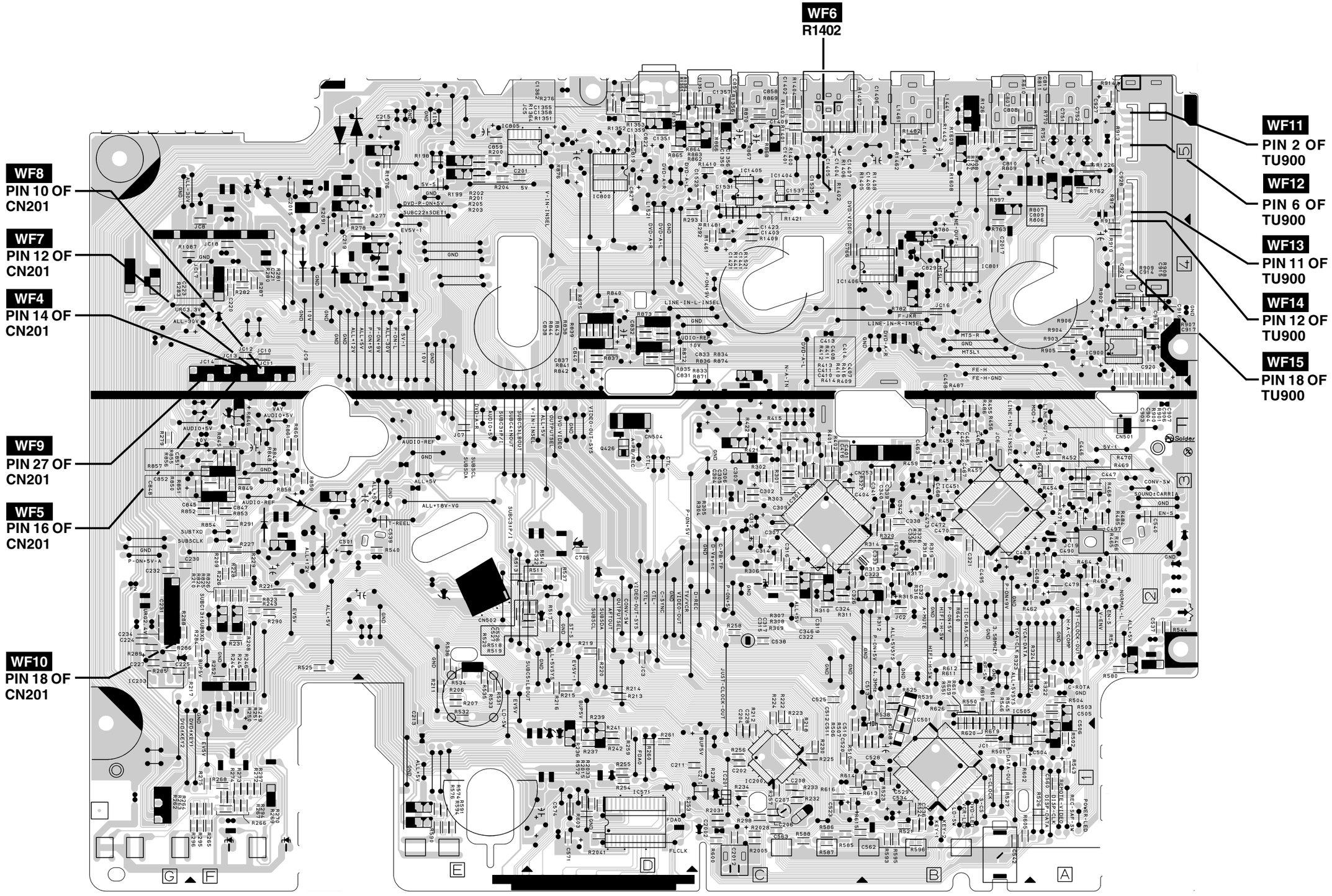
WF2
TP302
RF-SW

VR501
SW-P

TP513
CTL

TP502
S-INH

Main CBA Bottom View



Power Supply CBA Top View

CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES
D'INCELE N'UTILISER QUE DES FUSIBLE DE MÊME TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.
"This symbol means fast operating fuse."
"Ce symbole reprèsente un fusible à fusion rapide."

CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

BECAUSE A HOT CHASSIS GROUND IS PRESENT IN THE POWER SUPPLY CIRCUIT , AN ISOLATION TRANSFORMER MUST BE USED. ALSO , IN ORDER TO HAVE THE ABILITY TO INCREASE THE INPUT SLOWLY , WHEN TROUBLESHOOTING THIS TYPE POWER SUPPLY CIRCUIT , A VARIABLE ISOLATION TRANSFORMER IS REQUIRED.

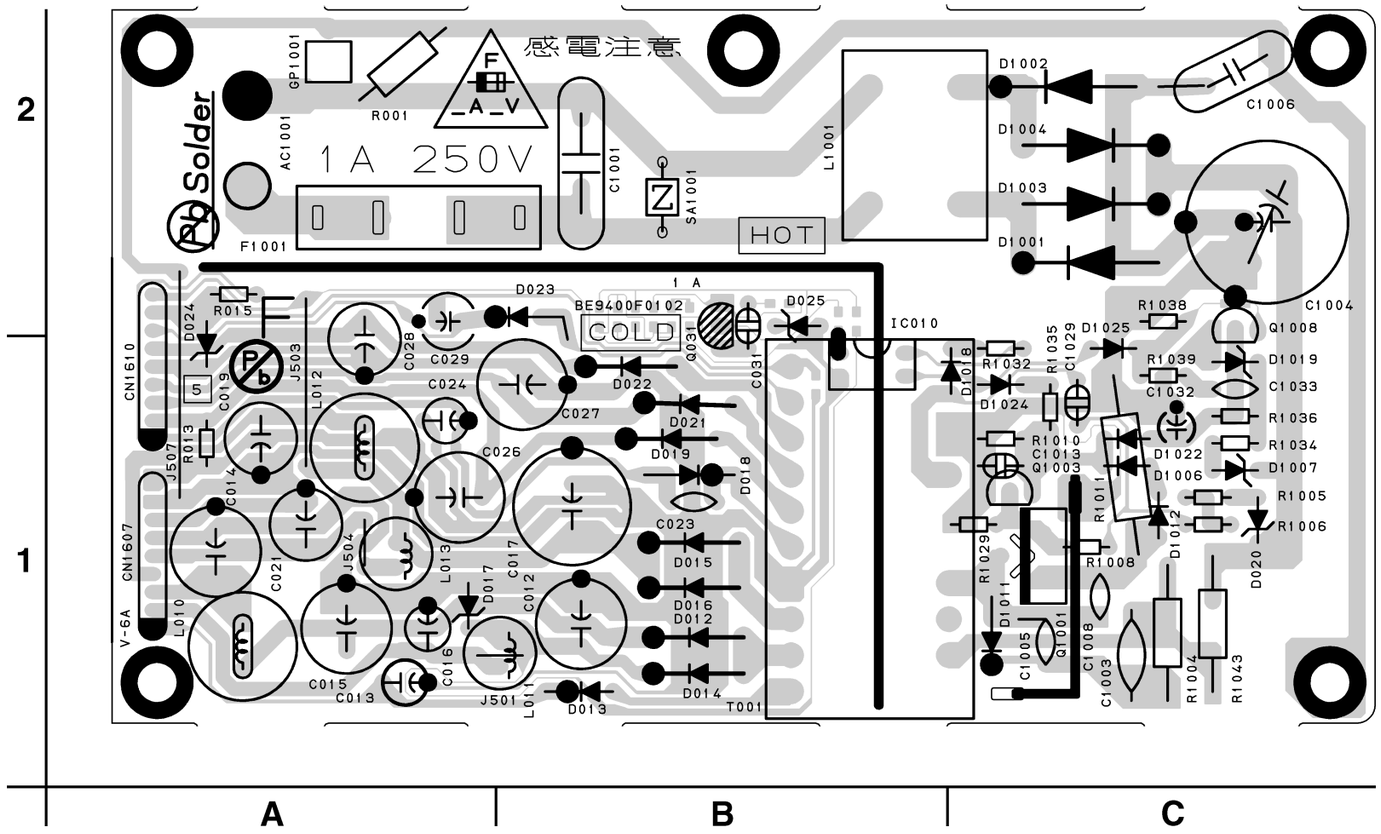
NOTE :
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

Main CBA Parts Location Guide

Ref No.	Position	Ref No.	Position
ICS		TRANSISTORS	
IC200	C-1	Q800	F-1
IC201	C-1	Q801	F-1
IC202	F-4	Q802	F-3
IC203	G-2	Q804	C-5
IC301	C-3	Q805	C-5
IC451	B-3	Q806	C-5
IC501	B-1	Q1005	E-5
IC571	D-1	Q1006	F-5
IC800	D-5	Q1351	D-5
IC801	B-4	Q1604	G-4
IC802	D-4	CONNECTORS	
IC803	D-4	CN200	F-2
IC804	F-3	CN201	F-4
IC805	E-5	CN202	G-2
IC900	A-4	CN253	B-3
IC1405	C-5	CN502	E-2
IC1406	C-4	CN504	D-3
TRANSISTORS		CN1604	G-4
Q052	E-4	CN1606	F-5
Q055	F-4	CN1608	F-5
Q056	F-4	CN1609	G-1
Q200	E-5	CN1613	A-2
Q201	E-5	CN1615	F-1
Q202	D-2	VARIABLE RESISTOR	
Q203	D-1	VR501	A-2
Q204	F-5	TEST POINTS	
Q301	C-2	TP200	F-2
Q302	C-2	TP201	E-2
Q303	C-2	TP202	E-2
Q391	A-5	TP203	E-2
Q421	C-3	TP301	A-2
Q422	C-4	TP302	A-2
Q425	C-3	TP452	A-3
Q426	D-3	TP502	F-1
Q501	A-1	TP505	E-3
Q502	A-2	TP506	E-2
Q506	C-2	TP507	A-3
Q561	E-1	TP513	A-2
Q562	E-1	TP751	A-5
Q564	A-2	TP753	A-5
Q780	B-4	TP754	A-5
Q781	B-4		

POWER SUPPLY CBA

Ref No.	Position
IC	
IC010	B-2
TRANSISTORS	
Q031	B-2
Q1001	C-1
Q1003	C-1
Q1008	C-2
CONNECTORS	
CN1607	A-1
CN1610	A-1



Power Supply CBA Bottom View

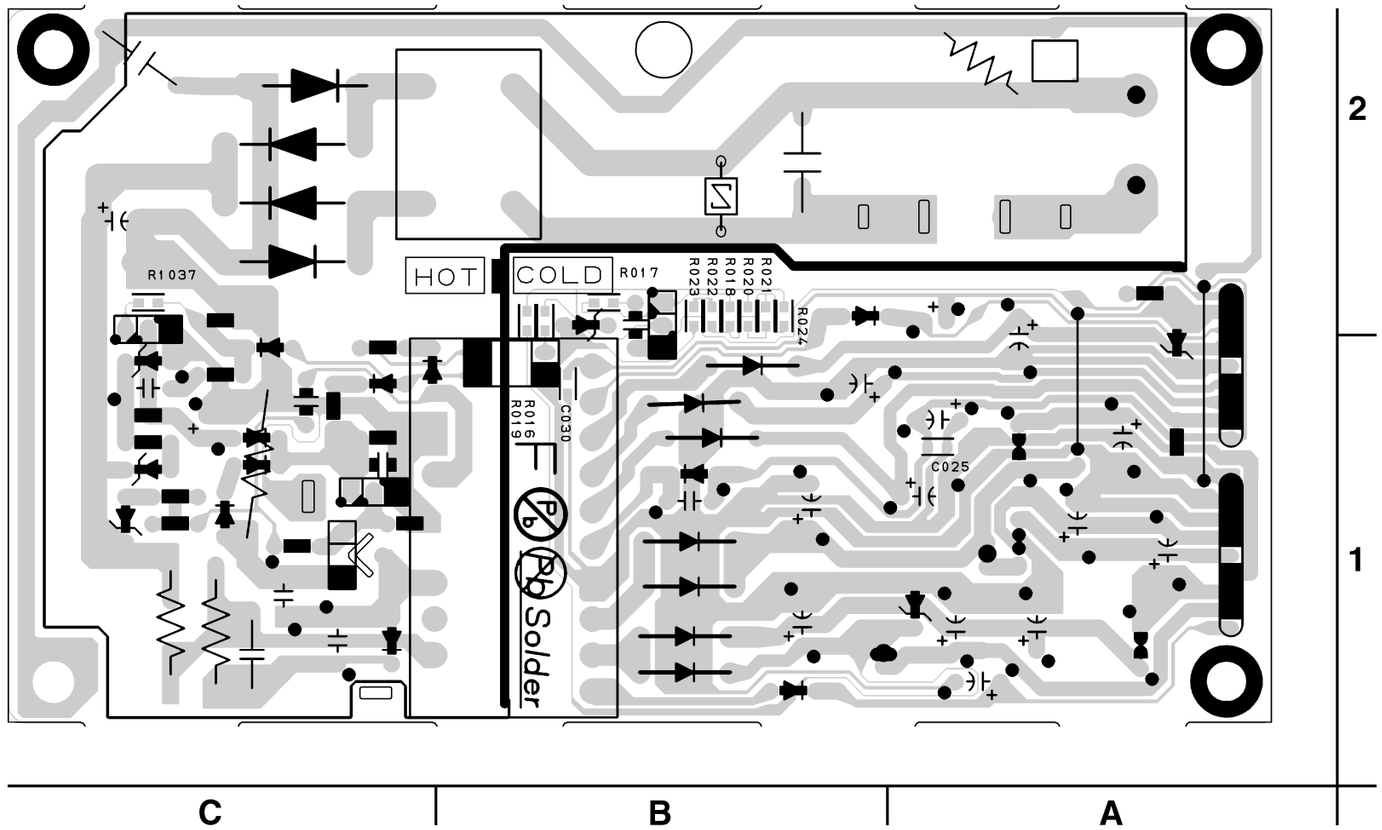
CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES
D'INCELE N'UTILISER QUE DES FUSIBLE DE MÊME TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.

"This symbol means fast operating fuse."
"Ce symbole reprèsente un fusible à fusion rapide."

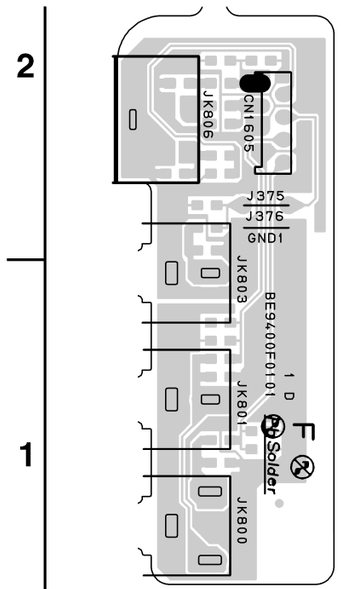
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

NOTE :
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

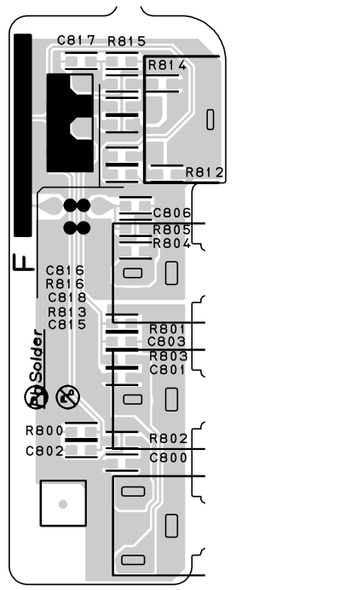
BECAUSE A HOT CHASSIS GROUND IS PRESENT IN THE POWER SUPPLY CIRCUIT , AN ISOLATION TRANSFORMER MUST BE USED. ALSO , IN ORDER TO HAVE THE ABILITY TO INCREASE THE INPUT SLOWLY , WHEN TROUBLESHOOTING THIS TYPE POWER SUPPLY CIRCUIT , A VARIABLE ISOLATION TRANSFORMER IS REQUIRED.



Jack CBA Top View

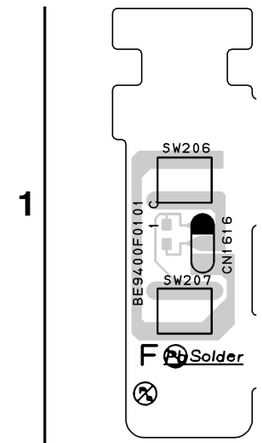


Jack CBA Bottom View

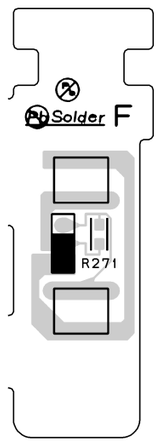


BE9400F01011D

Function CBA Top View

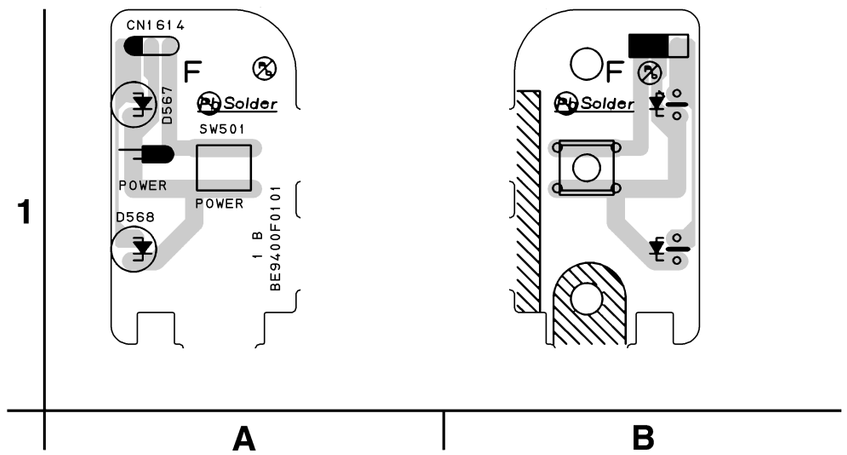


Function CBA Bottom View



BE9400F01011C

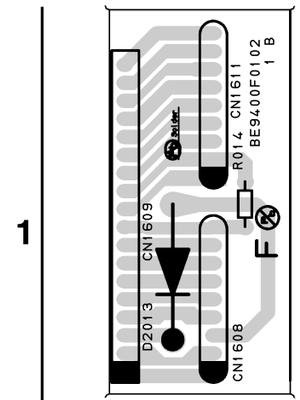
Power SW CBA Top View



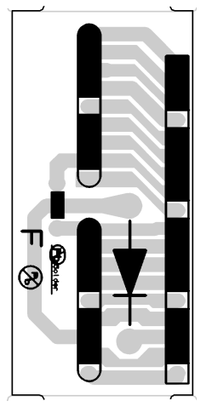
Power SW CBA Bottom View

BE9400F01011B

Junction CBA Top View



Junction CBA Bottom View

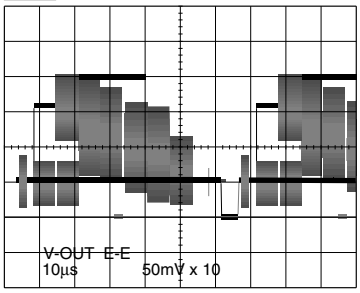


BE9400F01021B

WAVEFORMS

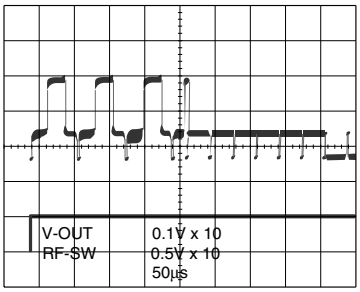
NOTE:
Input: COLOR BAR SIGNAL (WITH 1KHz AUDIO SIGNAL)

WF1 TP751



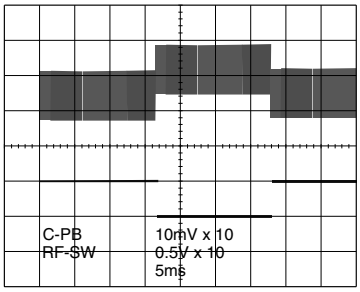
WF1 UPPER TP751

WF2 LOWER TP302

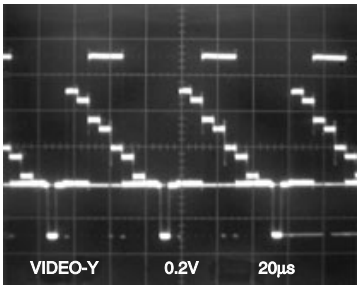


WF3 UPPER TP301

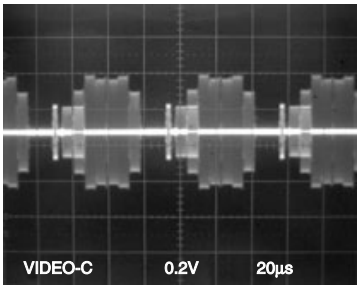
WF2 LOWER TP302



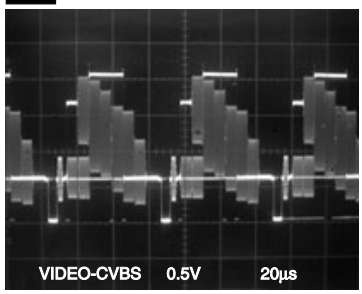
WF4 Pin 14 of CN201



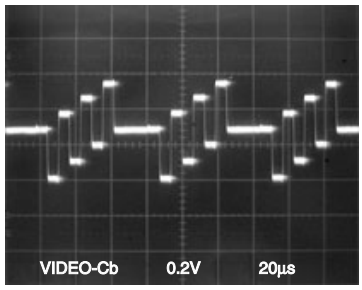
WF5 Pin 16 of CN201



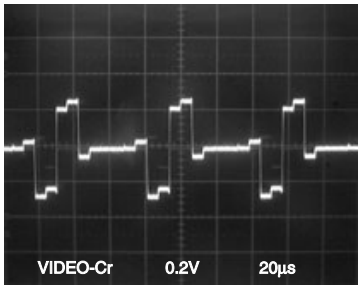
WF6 R1402



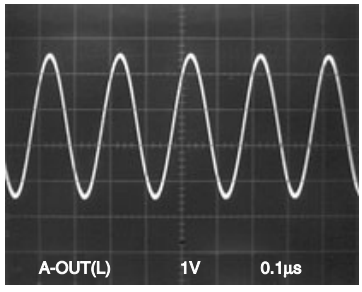
WF7 Pin 12 of CN201



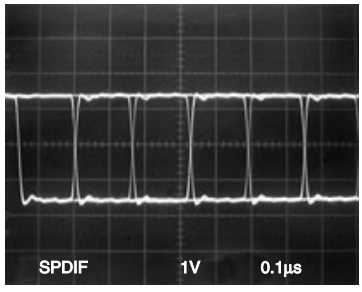
WF8 Pin 10 of CN201



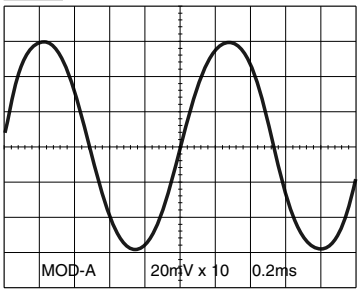
WF9 Pin 25 of CN201



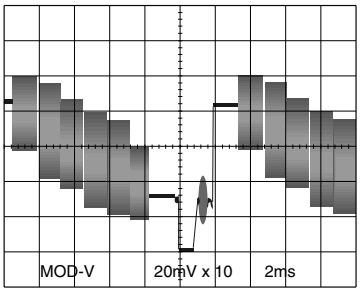
WF10 Pin 18 of CN202



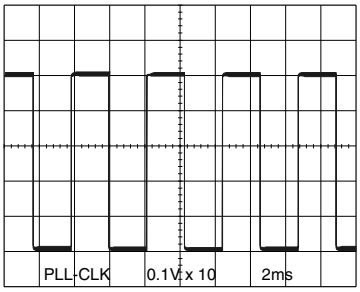
WF11 Pin 2 of TU701



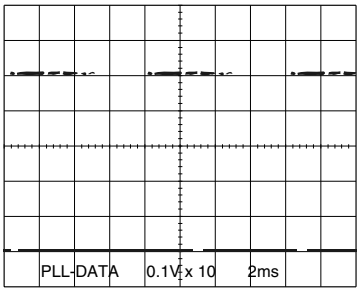
WF12 Pin 6 of TU701



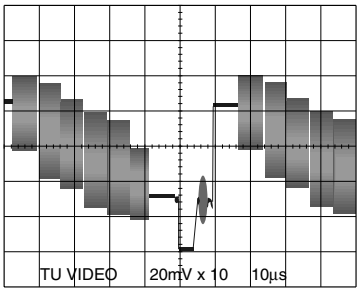
WF13 Pin 11 of TU701



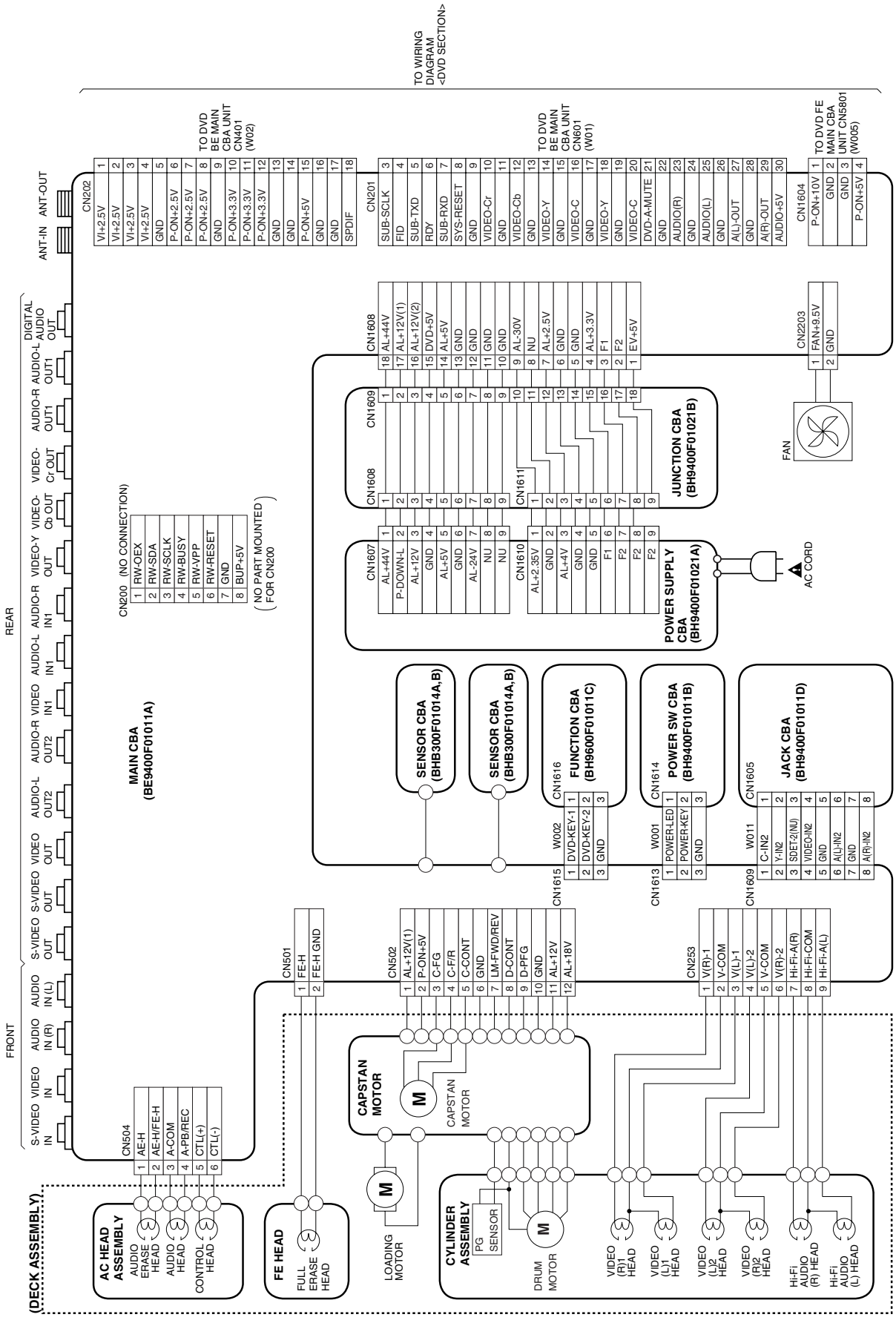
WF14 Pin 12 of TU701



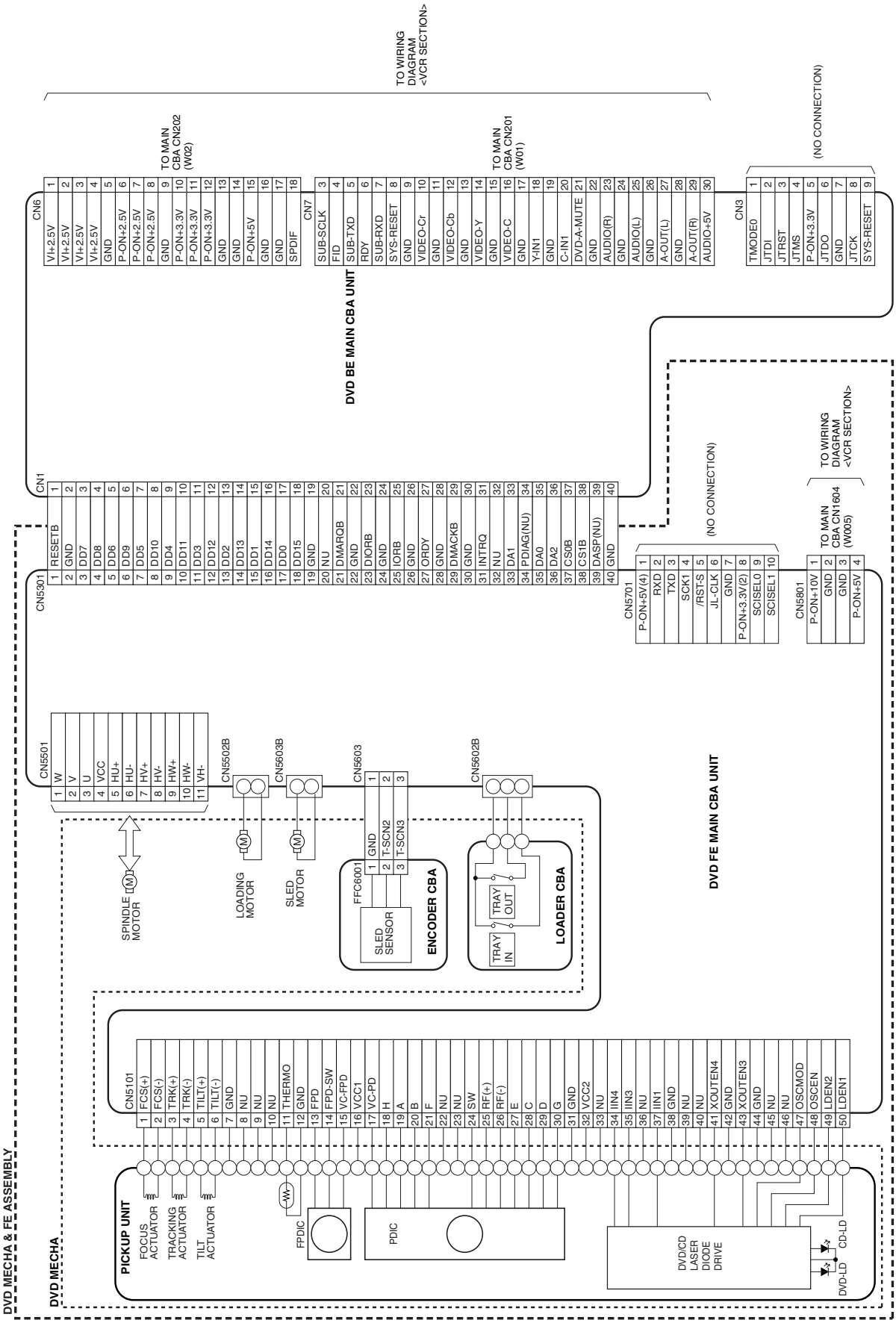
WF15 Pin 18 of TU701



WIRING DIAGRAM < VCR SECTION >



WIRING DIAGRAM < DVD SECTION >



SYSTEM CONTROL TIMING CHARTS

[VCR Section]

Mode SW : LD-SW

LD-SW Position detection A/D Input voltage Limit (Calculated voltage)	Symbol
3.76V~4.50V (4.12V)	EJ
4.51V~5.00V (5.00V)	CL
0.00V~0.25V (0.00V)	SB
1.06V~1.50V (1.21V)	TL
0.66V~1.05V (0.91V)	FB
1.99V~2.60V (2.17V)	SF
1.51V~1.98V (1.80V)	SM
3.20V~3.75V (3.40V)	AU
0.26V~0.65V (0.44V)	AL
4.51V~5.00V (5.00V)	SS
2.61V~3.19V (2.97V)	RS

Note:

Note:

EJ ⟶ RS: Loading FWD (LM-FWD/REV “H”)
RS ⟶ EJ: Loading REV (LM-FWD/REV “L”)
Stop (A) = Loading
Stop (B) = Unloading

Note:

Symbol	Loading Status
EJ	Eject
CL	Eject ~ REW Reel
SB	REW Reel ~ Stop(B)
TL	Stop(B) ~ Brake Cancel
FB	Brake Cancel ~ FF / REW
SF	FF / REW ~ Stop(M), (FF / REW)
SM	Stop(M), (FF / REW) ~ Stop(A)
AU	Stop(A) ~ Play / REC
AL	Play / REC ~ Still / Slow
SS	Still / Slow ~ RS (REW Search)
RS	RS (REW Search)

Still/Slow Control
Frame Advance Timing Chart

1) SP Mode

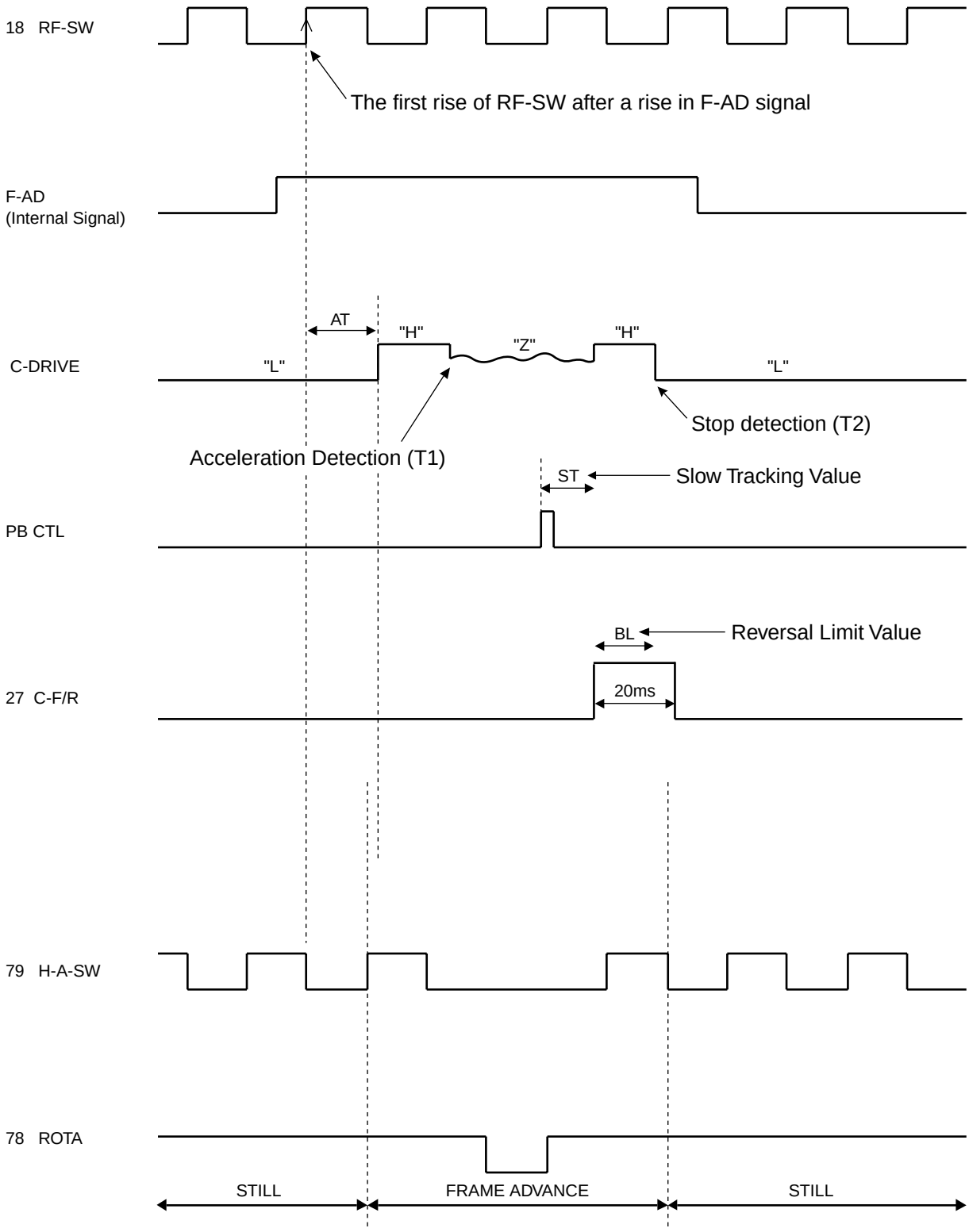


Fig. 1

2) LP/SLP Mode

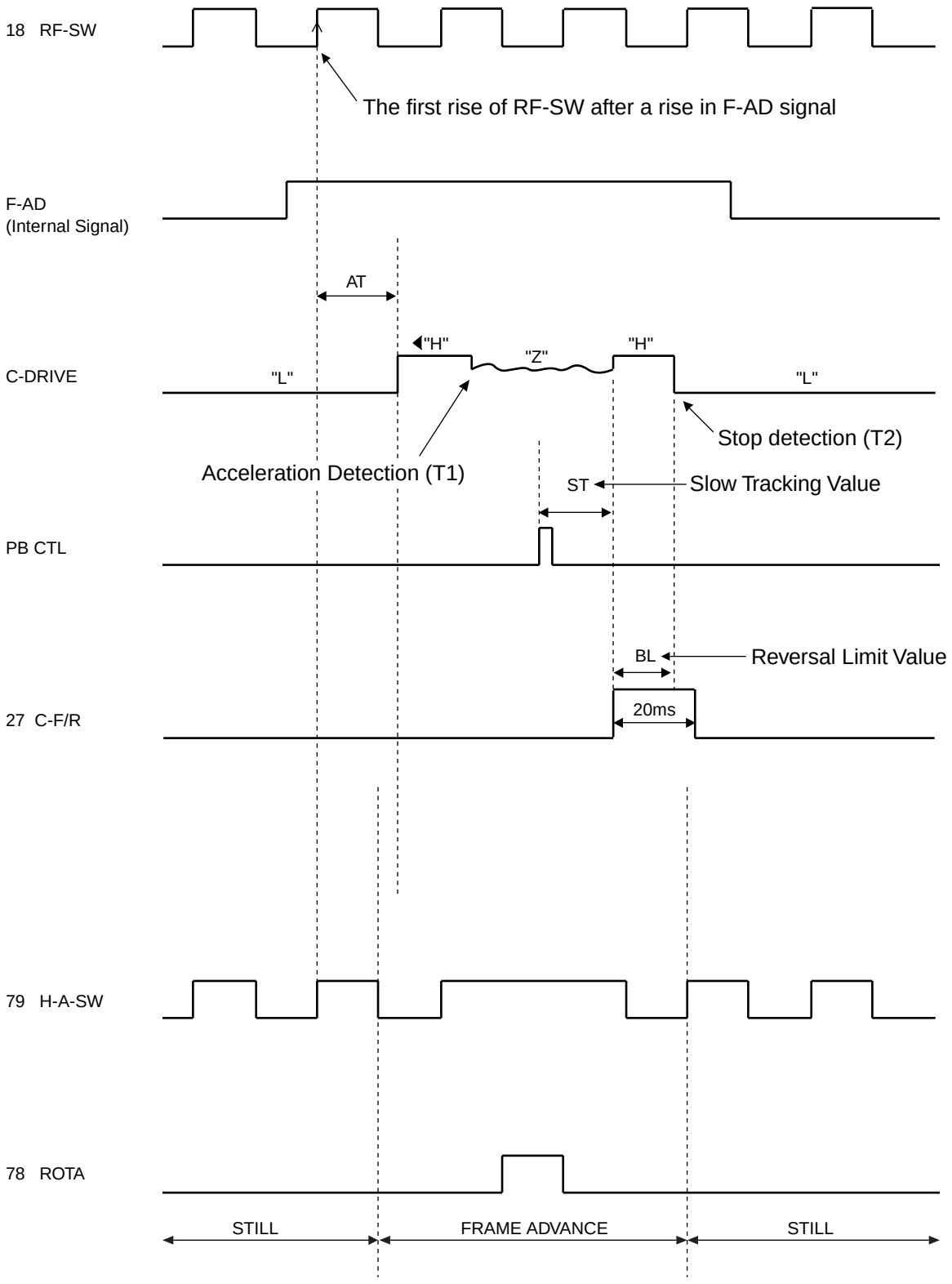


Fig. 2

1. EJECT (POWER OFF) -> CASSETTE IN (POWER ON) -> STOP(B) -> STOP(A) -> PLAY -> RS -> FS -> PLAY -> STILL -> PLAY -> STOP(A)

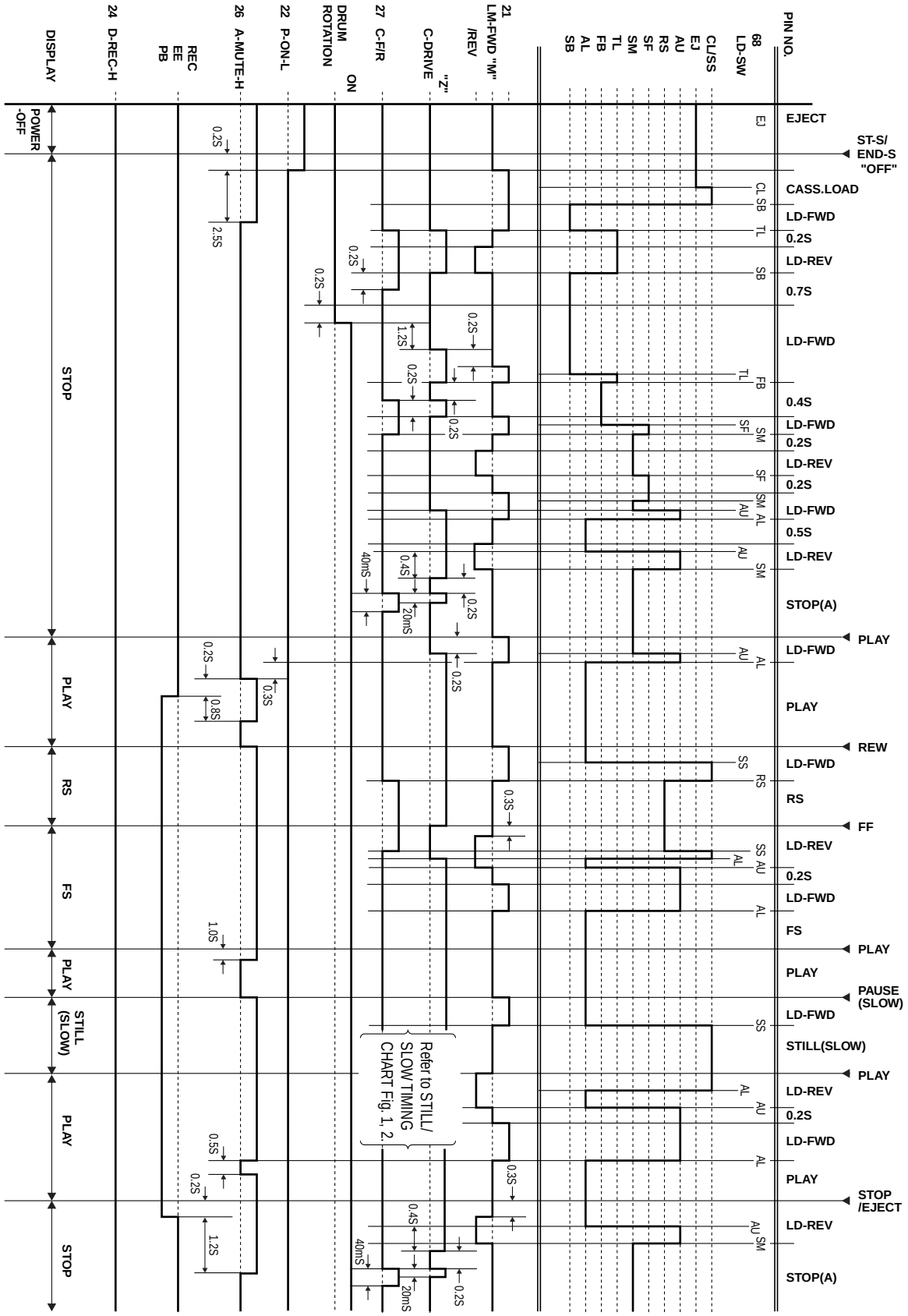


Fig. 3

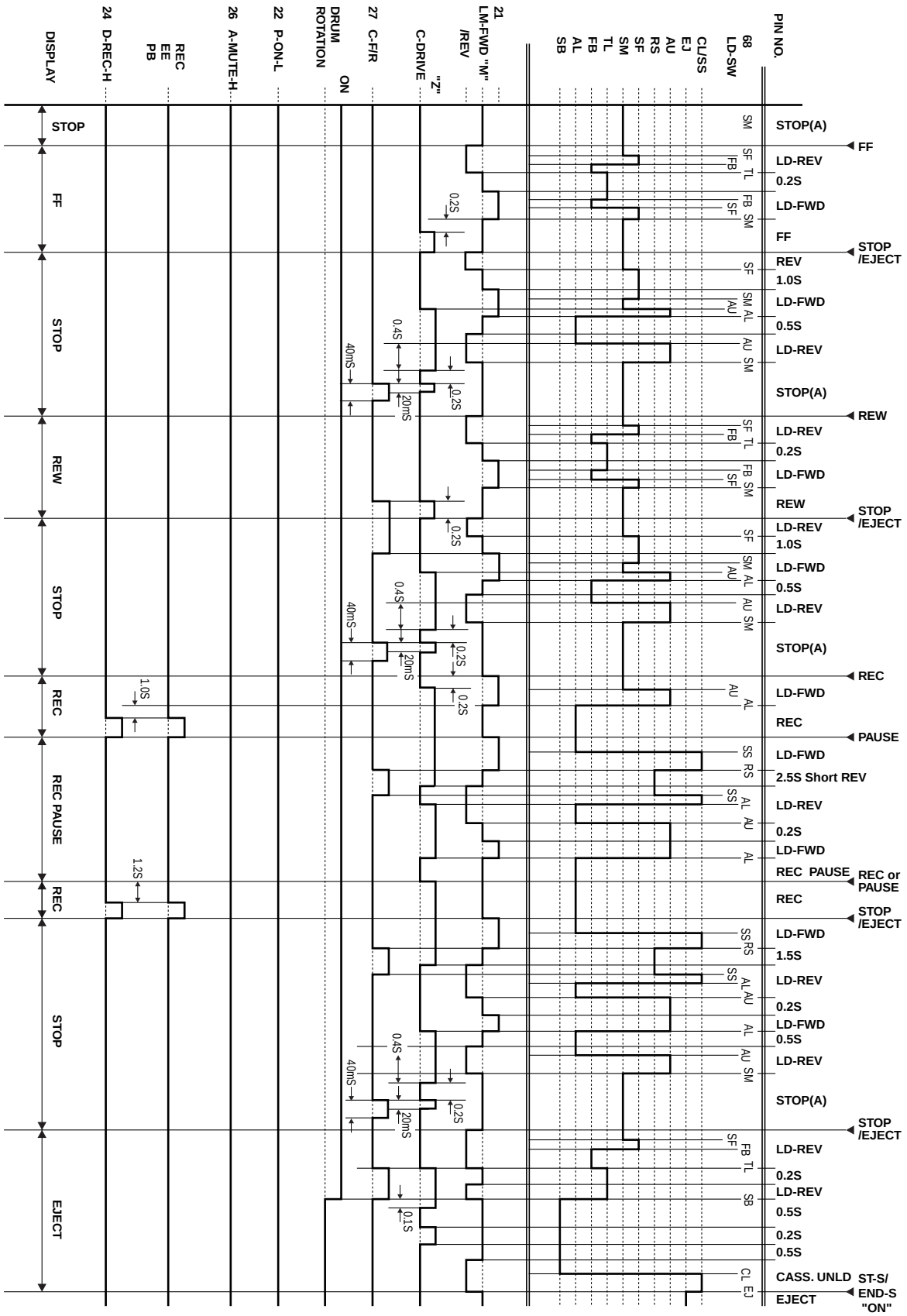
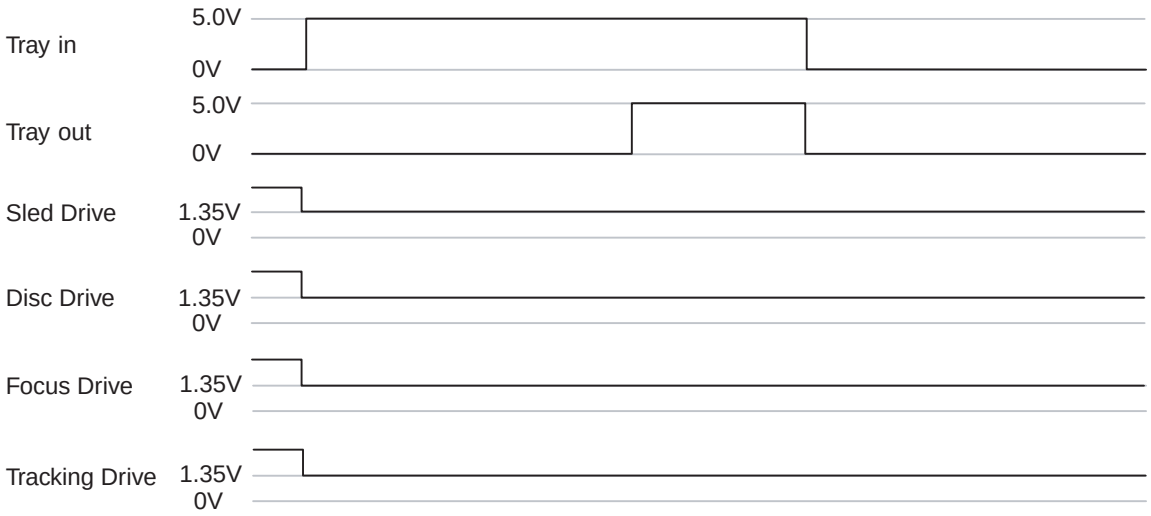

2. STOP(A) -> FF -> STOP(A) -> REW -> STOP(A) -> REC -> PAUSE -> PAUSE or REC -> STOP(A) -> EJECT
PIN NO.
68 LD-SW
CL/SS
EJ
AU
RS
SF
SM
TL
FB
AL
SB
21 LM-FWD "M" /REV
"Z" C-DRIVE
27 C-F/R
DRUM ROTATION ON
22 P-ON-L
26 A-MUTE-H
REC EE PB
24 D-REC-H
DISPLAY
STOP
FF
STOP
REW
STOP
REC
REC PAUSE
REC
STOP
EJECT
STOP(A)
FF
LD-REV
0.2S
LD-FWD
FF
STOP /EJECT
REV
1.0S
LD-FWD
0.5S
LD-REV
STOP(A)
REW
LD-REV
0.2S
LD-FWD
REW
STOP /EJECT
LD-REV
1.0S
LD-FWD
0.5S
LD-REV
STOP(A)
REC
LD-FWD
REC
PAUSE
LD-FWD
2.5S Short REV
LD-REV
0.2S
LD-FWD
REC PAUSE
REC or PAUSE
REC
STOP /EJECT
LD-FWD
1.5S
LD-REV
0.2S
LD-FWD
0.5S
LD-REV
STOP(A)
STOP /EJECT
LD-REV
0.2S
LD-REV
0.5S
0.2S
0.5S
CASS. UNLD
EJECT
ST-S/ END-S "ON"
0.2S
0.4S
40mS
20mS
1.0S
1.2S
0.1S

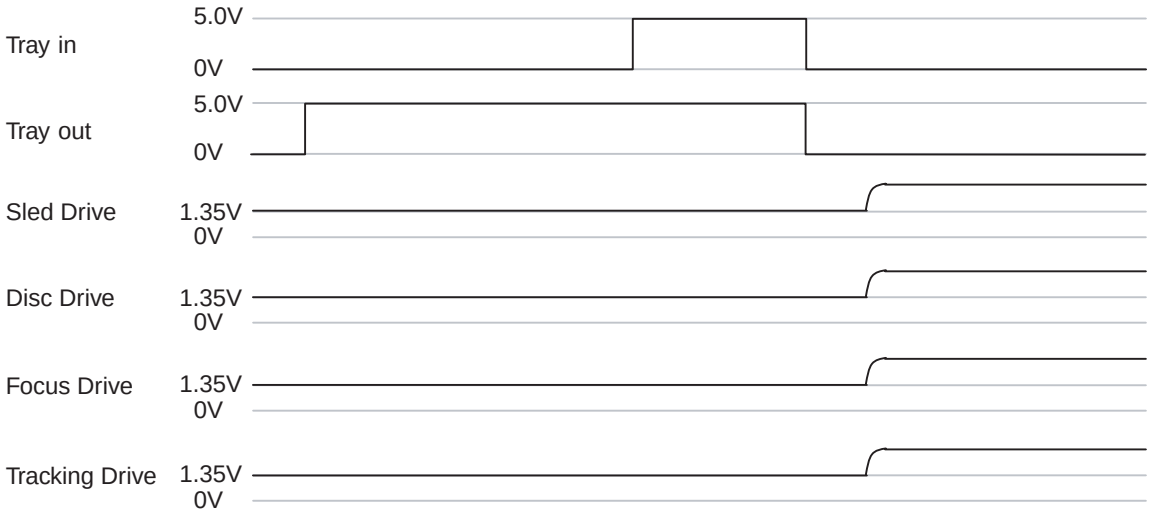
Fig. 4

[DVD Section]

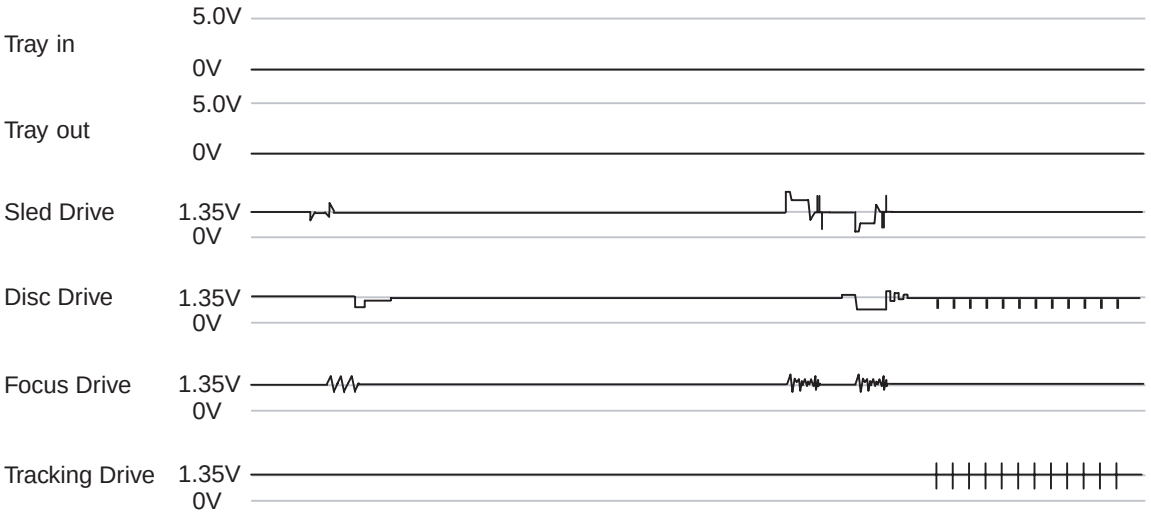
Tray in



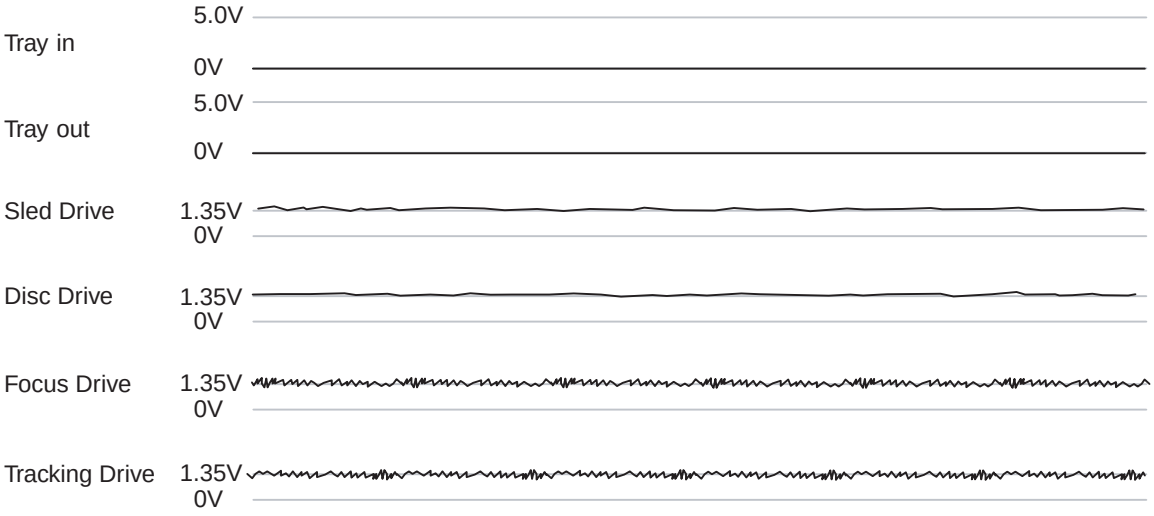
Tray out



Spin up



Playing



IC PIN FUNCTION DESCRIPTIONS

[VCR Section]

IC501 (SYSTEM CONTROL MICROPROCESOR)

"H" ≥ 4.5V, "L" ≤ 1.0V

Pin No.	IN/ OUT	Signal Name	Function	Active Level
1	IN	S-CS	Communication of Select with Sub Micro Controller	L
2	IN	REC-SAF-SW	Recording Safety SW Detect (With Record tab = "L"/ With out Record tab = "H")	H
3	IN	T-REEL	Take Up Reel Rotation Signal	PULSE
4	-	N.U.	Not Used	-
5	IN	REMOTE-VIDEO	Remote Control Sensor	L
6	IN	S-CLK	Communication of Clock with Sub Micro Controller	H/L
7	IN	S-DATA-IN	Communication of Data from Sub Micro Controller	H/L
8	OUT	S-DATA-OUT	Communication of Data to Sub Micro Controller	H/L
9	OUT	DISPLAY-ENA	FL Display Driver IC Enable Control Output Signal	L
10	OUT	DISPLAY-DATA	FL Display Driver IC Data Control Output Signal	H/L
11	OUT	DISPLAY-CLK	FL Display Driver IC Clock Control Output Signal	H/L
12	IN/ OUT	IIC-BUS-SDA	IIC BUS Control Data	H/L
13	OUT	IIC-BUS-SCL	IIC BUS Control Clock	H/L
14	OUT	YCA-SCL	YCA IC Control Clock	H/L
15	OUT	YCA-SDA	YCA IC Control Data	H/L
16	OUT	YCA-CS	YCA IC Control Chip Select	H
17	-	N.U.	Not Used	-
18	OUT	RF-SW	Video Head Switching Pulse	H/L
19	OUT	D-V SYNC	Dummy V-sync Output	H/Hi-z
20	IN	RESET	System Reset Signal (Reset="L")	L
21	OUT	LM-FWD/ REV	Loading Motor FWD/ REV Output	H/Z/L
22	OUT	P-ON-L	Power On Signal to Low	L
23	-	N.U.	Not Used	-
24	OUT	D-REC-H	Delayed Record Signal	H
25	OUT	HiFi-H-SW	HiFi Audio Head Switching Pulse	H/L
26	OUT	A-MUTE-H	Audio Mute Control Signal (Mute = "H")	H
27	OUT	C-F/R	Capstan Motor FWD/ REV Control Signal (FWD="L"/REV="H")	H/L
28	OUT	C-CONT	Capstan Motor Control Signal	PWM
29	OUT	D-CONT	Drum Motor Control Signal	PWM
30	-	N.U.	Not Used	-
31	-	VDD	VDD (AL+5V)	-
32	OUT	OSCO	Main Clock Output 14.31818MHz	-
33	IN	OSCI	Main Clock Input 14.31818MHz	-
34	-	VSS	VSS (GND)	
35	-	N.U.	Not Used	-
36	-	N.U.	Not Used	-
37	IN	SXI	Operation Mode Selecting Input Signal	-
38	OUT	VIDEO-OUT	Composite Video Signal Output	-
39	-	Vss2	Vss2 (GND)	-
40	IN	VIDEO-IN	Composite Video Signal Input	-
41	IN	C-SYNC	Composite Synchronized Pulse	PULSE
42	-	VDD2	VDD2 (AL+5V)	-
43	IN	AFCC	Low Path Filter Input Signal For AFC	-
44	OUT	AFCLPF	Low Path Filter Output Signal For AFC	-
45	-	N.U.	Not Used	-

Pin No.	IN/ OUT	Signal Name	Function	Active Level
46	OUT	OUTPUT-SELECT	Output Select (DVD="L"/VCR="H")	H/L
47	IN	D-PFG	Drum PG/FG Input Signal	PULSE
48	-	N.U.	Not Used	-
49	IN	C-FG	Capstan Motor Rotation Detection Pulse	PULSE
50	-	AFG	GND	-
51	OUT	VRO	Servo Standard Voltage Output	-
52	IN	VRI	Servo Standard Voltage Input	-
53	-	AVss	AVSS (GND)	-
54	IN	CTLA	CTL Amp. AC GND	-
55	-	AVDD	AVDD (AL+5V)	-
56	IN/ OUT	CTL (+)	Playback/Record Control Signal (+)	-
57	IN/ OUT	CTL (-)	Playback/Record Control Signal (-)	-
58	OUT	CTL	Amp. Output Control Signal for Test Point	-
59	IN	HiFi/ NOR-IN	Audio Mode Input HiFi="L"/ Normal="H"	A/D
60	IN	POWER-SAF	P-ON+5V Power Detection Input Signal	A/D
61	-	N.U.	Not Used	-
62	IN	END-S	Tape End Position Detect Signal	A/D
63	-	N.U.	Not Used	-
64	IN	V-ENV	Video Envelope Comparator Signal	A/D
65	IN	PG-DELAY	Video Head Switching Pulse Signal Adjusted Voltage	A/D
66	IN	KEY-2	A/D Key Data Signal 2	A/D
67	IN	KEY-1	A/D Key Data Signal 1	A/D
68	IN	LD-SW	Deck Mode Position Detector Signal	A/D
69	IN	ST-S	Tape Start Position Detector Signal	A/D
70	OUT	VCR-IND	VCR Mode LED Signal Output	H
71	OUT	DVD-IND	DVD Mode LED Signal Output	H
72	-	N.U.	Not Used	-
73	OUT	POWER-IND	Power LED Signal Output	H
74	-	N.U.	Not Used	-
75	-	N.U.	Not Used	-
76	-	N.U.	Not Used	-
77	-	N.U.	Not Used	-
78	OUT	C-ROTA	Color Phase Rotary Changeover Signal	H/L
79	OUT	H-A-SW	Video Head Amp Switching Pulse	H/L
80	IN	H-A-COMP	Head Amp Comparator Signal	H/L

Notes:

Abbreviation for Active Level:

PWM -----Pulse Wide Modulation

A/D--------Analog - Digital Converter

IC200 (SUB MICRO CONTROLLER)

Pin No.	IN/ OUT	Signal Name	Name Function
1	IN	DVD-KEY-1	DVD Key Data Input 1
2	IN	DVD-KEY-2	DVD Key Data Input 2
3	-	N.U.	Not Used
4	IN	REMOTE	Remote Signal Input
5	-	N.U.	Not Used
6	-	N.U.	Not Used
7	-	N.U.	Not Used
8	OUT	FL-STB	Serial Interface Strobe
9	OUT	FL-CLK	Serial Clock
10	OUT	FL-SDA	Serial Data
11	-	N.U.	Not Used
12	OUT	RW-BUSY	For Flash Memory Writing
13	IN	RW-SCLK	For Flash Memory Writing
14	-	N.U.	Not Used
15	IN/ OUT	RW-SDA	For Flash Memory Writing
16	IN	P-DOWN	Power Voltage Down Detector Signal
17	-	N.U.	Not Used
18	IN	RW-VPP	For Flash Memory Writing
19	IN	RESET	Micro Controller Reset Signal

Pin No.	IN/ OUT	Signal Name	Name Function
20	IN	XCIN	Sub Clock Input
21	OUT	XCOUT	Sub Clock Output
22	IN	XIN	Main Clock Input
23	OUT	XOUT	Main Clock Output
24	-	GND	Ground
25	OUT	PWSW	Main Power Control Signal
26	-	N.U.	Not Used
27	-	N.U.	Not Used
28	-	N.U.	Not Used
29	OUT	S-CS	Communication of Select with VCR Micro Controller
30	IN	S-DATA-OUT	Communication of Data from VCR Micro Controller
31	OUT	S-DATA-IN	Communication of Data to VCR Micro Controller
32	OUT	S-CLK	Communication of Clock with VCR Micro Controller
33	OUT	VCR/TV	RF Conv. ON/OFF Signal (TV="L"/VIDEO="H")
34	OUT	CONV-SW	RF Conv. Output Channel Switching Signal 3ch=”Hi-z”, 4ch=”L”
35	-	N.U.	Not Used
36	-	N.U.	Not Used
37	-	N.U.	Not Used
38	-	N.U.	Not Used
39	OUT	V-MUTE	Video Mute Control Signal
40	OUT	SYS-RESET	System Reset Signal
41	IN	RDY	Ready/Busy Communication Control with Main Micro Controller
42	IN	FID	Video Presence Detector Signal
43	-	N.U.	Not Used
44	-	N.U.	Not Used
45	OUT	INSEL-0	Audio Input Select Signal
46	OUT	INSEL-1	Audio Input Select Signal
47	OUT	A-MUTE	Audio Mute Control Signal
48	-	N.U.	Not Used
49	IN	RW-OEX	For Flash Memory Writing
50	OUT	SUB-SCLK	Communication Clock with Main Micro Controller

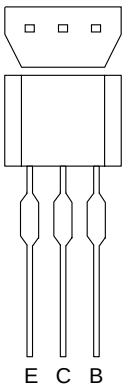
Pin No.	IN/ OUT	Signal Name	Name Function
51	OUT	SUB-TXD	Transmission Data to Main Micro Controller
52	IN	SUB-RXD	Reception Data from Main Micro Controller
53	OUT	SUB-SCL	Serial Clock
54	IN/ OUT	SUB-SDA	Serial Data
55	-	N.U.	Not Used
56	-	N.U.	Not Used
57	IN	VCC	+5V Power Supply
58	IN	V-REF	Reference Voltage
59	-	AVSS	Ground
60	-	N.U.	Not Used
61	OUT	REG-CONT	Power Regulator Control Signal
62	IN	AFT	Tuner Voltage Input Signal
63	IN	SDET-1	Aspect Ratio Detector Signal
64	IN	POW-SW	Abnormal Voltage Detection

[DVD Section]

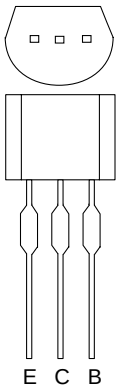
IC571 [PT6313-S-TP]

Pin No.	In/Out	Signal Name	Name Function
1	IN	CLK	Clock Input
2	IN	STB	Serial Interface Strobe
3	-	N.U.	Not Used
4	-	N.U.	Not Used
5	-	VSS	GND
6	-	VDD	Power Supply
7	OUT	a	Segment Output
8	OUT	b	
9	OUT	c	
10	OUT	d	
11	OUT	e	
12	IN	f	
13	IN	g	
14	OUT	h	
15	-	VEE	Pull Down Level
16	OUT	i	Segment Output
17	OUT	7G	Grid Output
18		6G	
19		5G	
20		4G	
21		3G	
22		2G	
23		1G	
24	-	VDD	Power Supply
25	-	VSS	GND
26	IN	OSC	Oscillator Input
27	-	N.U.	Not Used
28	IN	DIN	Serial Data Input

LEAD IDENTIFICATIONS

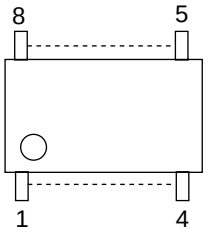


2SA1175(J,H,F)
2SC2785(J,H,F,K)
BA1F4M-T
BN1F4M-T
KRA103M
KRC103M
KRC108M
KTA1266(GR)
KTA1267(GR,Y)
KTC3193(Y)
KTC3199(GR,Y)

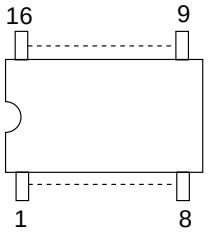


2SA1015-GR(TPE2)
2SC1815-GR(TPE2)
2SC1815-Y(TPE2)
2SC2120-O-TPE2
2SC2120-Y(TPE2)
KTC3198(GR,Y)
KTC3203(O,Y)

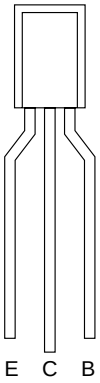
KIA4558P
NJM2100D
NJM4558D



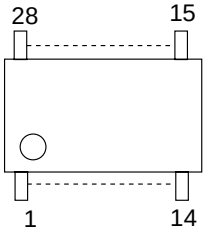
BU4053BCF
CD4053BCSJX
TC4052BF(EL)
TC4053BF(N)



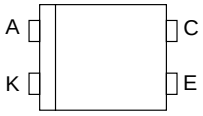
2SA933AS(S)
2SC536NF-NPA-AT
2SC536NG-NPA-AT



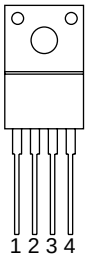
PT6313-S-TP



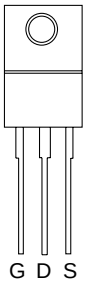
EL817A
EL817B
EL817C
LTV-817B-F
LTV-817C-F
PS2561A-1(Q,W)



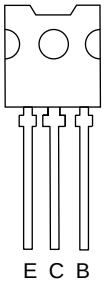
PQ070XF01SZ



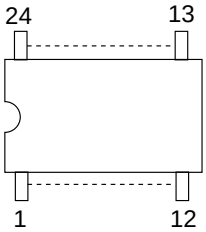
2SK3563



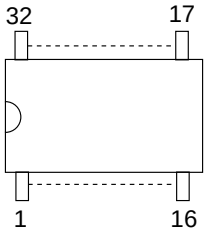
S2Y52



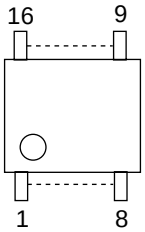
MM1657XJBE



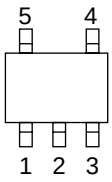
AN5832SA-E1



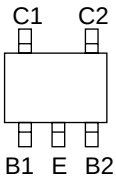
MM1637XVBE



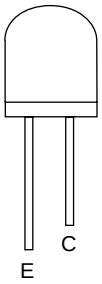
PST597INR



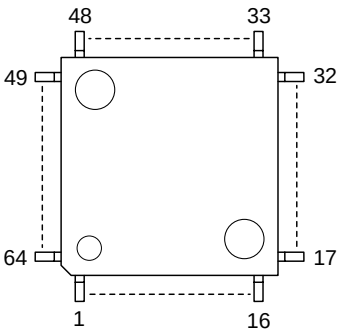
RN1511(TE85R)



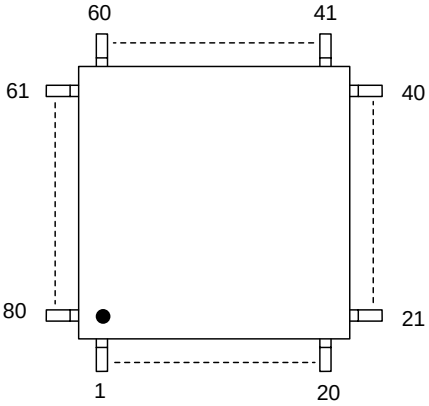
MID-32A22F
PT204-6B-12



M38039MC-176HP



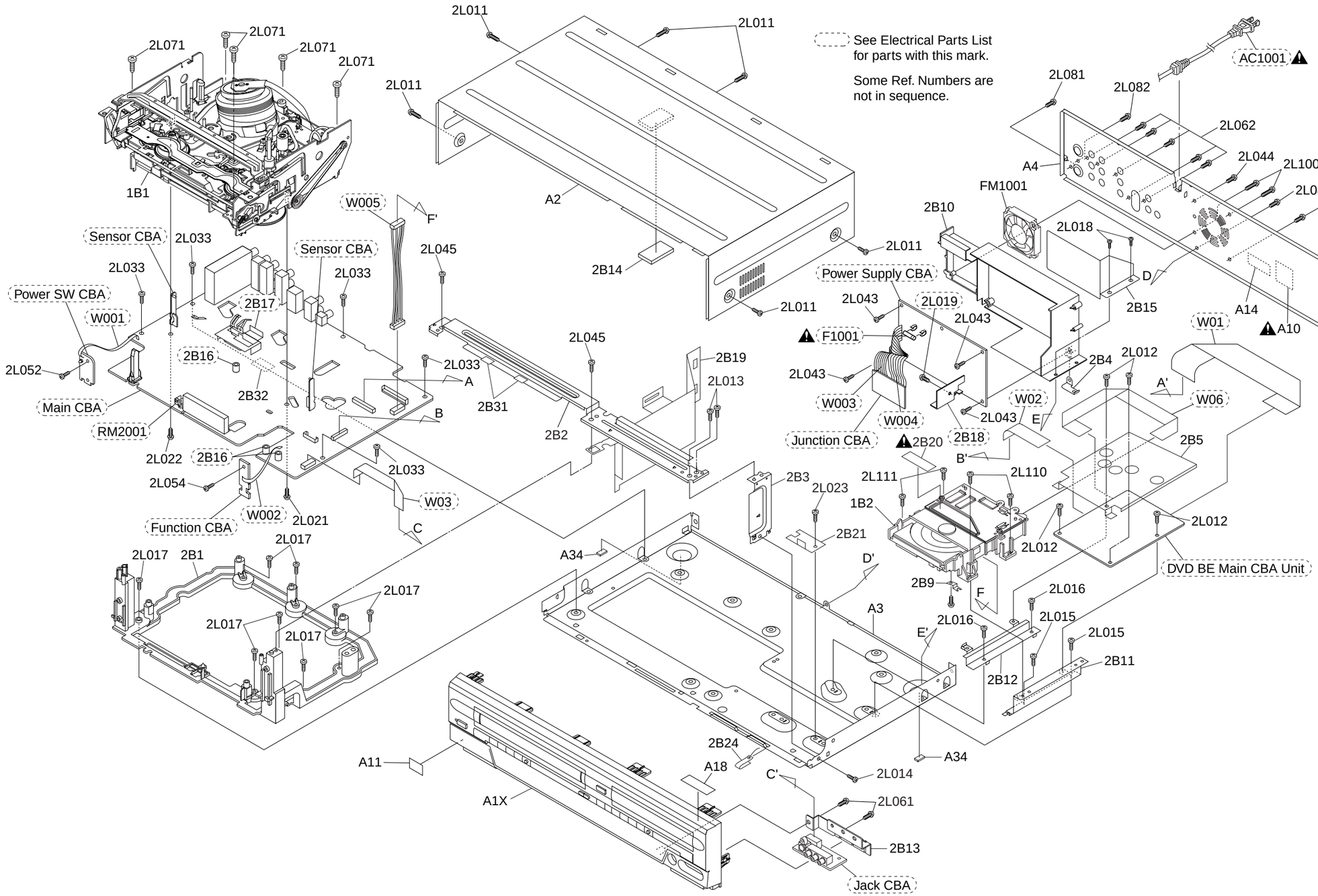
LA71205M-MPB-E
LA72670BM-MPB-E
QSZAD0RMS025



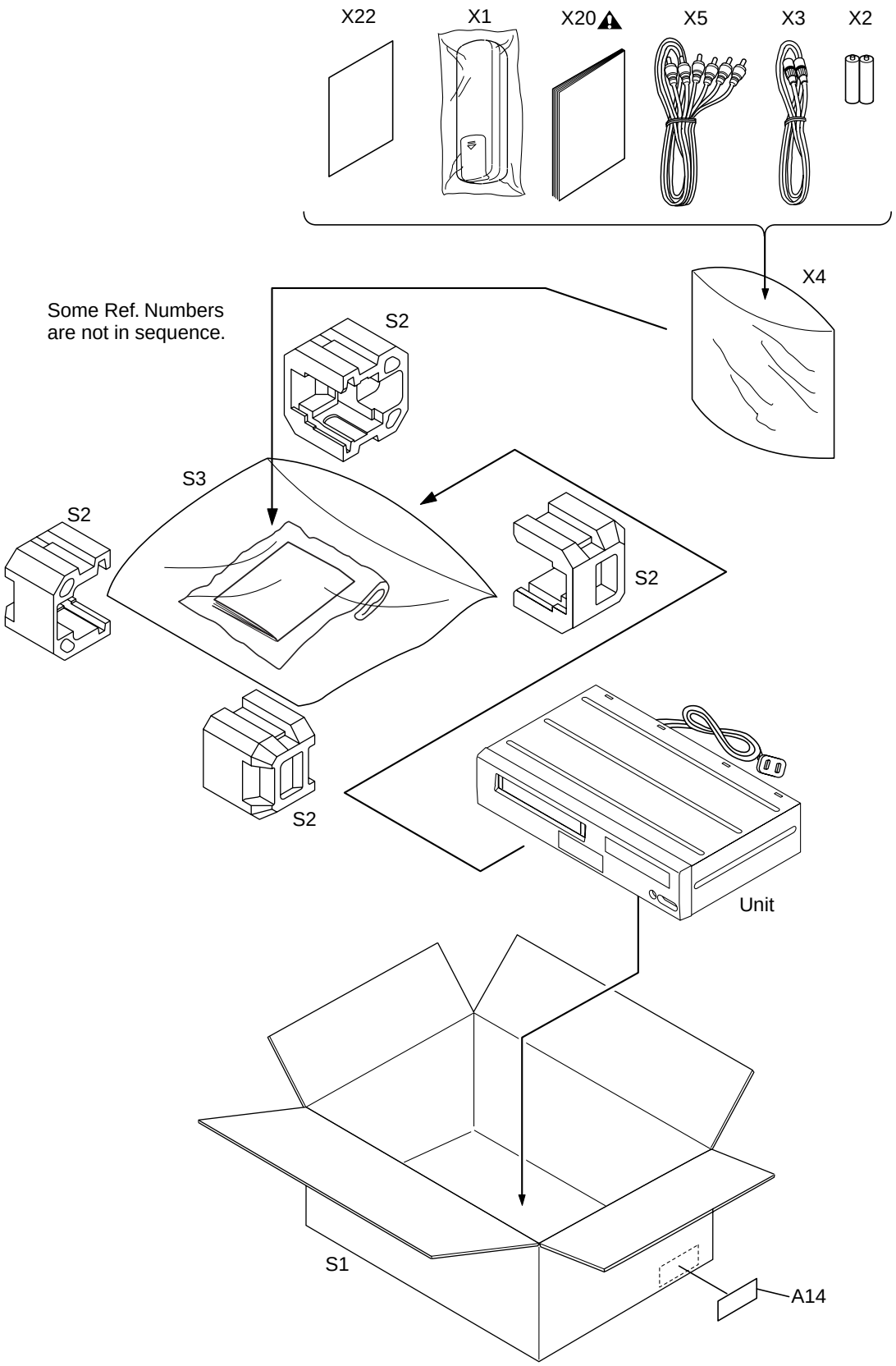
Note:
A: Anode
K: Cathode
E: Emitter
C: Collector
B: Base
R: Reference
S: Source
G: Gate
D: Drain

EXPLODED VIEWS

Cabinet



Packing


X22
X1
X20
X5
X3
X2
X4
Some Ref. Numbers
are not in sequence.
S2
S3
S2
S2
S2
Unit
S1
A14

MECHANICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

Ref. No.	Description	Part No.
A1X	FRONT ASSEMBLY E9400UD	0VM204682
A2	TOP COVER E9400UD	0VM101356
A3	MAIN CHASSIS E9400UD	0VM101353
A4	PANEL, REAR E9400UD	0VM204533
A10⚠	LABEL, RATING(U) E9400UD or	---------
⚠	LABEL, RATING(D) E9400UD	---------
A11	-R/RW LABEL E6500UD	---------
A14	LABEL, BAR CODE HB400UD or	---------
	LABEL, BAR CODE E9400UD	---------
A18	LABEL, TELEPHONE NUMBER H7931UD(EMERSON)	---------
A34	FOOT K7010UA	0VM403657
1B1	DECK ASSEMBLY CZD013/VM2260	N2260FL
1B2	DVD MECHA & FE ASSEMBLY	N7811FUQ
2B1	DECK PEDESTAL E9400UD	0VM101350
2B2	FRONT BRACKET E9400UD	0VM204534
2B3	FRONT BRACKET R E9400UD	0VM416269
2B4	EARTH PLATE E9400UD	0VM416272
2B5	SHIELD PLATE E9400UD	1VM420332
2B9	PLATE,MECHA EARTH E9400UD	0VM416368
2B10	HOLDER,PCB E9400UD	0VM101354
2B11	BRACKET R E9400UD	0VM416268
2B12	BRACKET L E9400UD	0VM416267
2B13	JACK BRACKET E9400UD	0VM416273
2B14	CUSHION,RUBBER E9400UD	0VM416664
2B15	FFC FRICTION PLATE E9400UD	0VM416738
2B19	RADIATION SHEET E9400UD	1VM320008
2B20⚠	CAUTION LABEL	---------
2B21	FFC FRICTION PLATE(B) E9400UD	1VM420273
2B24	FRONT EARTH PLATE E9400UD	1VM420347
2B31	TAPE, HIMELON H9206JD	0VM413956
2B32	DOUBLE SIDE TAPE HB200UD	0VM412870
2L011	SCREW, C-TIGHT M3X5 BIND HEAD +	GBCC3050
2L012	SCREW, S-TIGHT M3X6 BIND HEAD+	GBMS3060
2L013	SCREW, S-TIGHT M3X6 BIND HEAD+	GBMS3060
2L014	SCREW, S-TIGHT M3X6 BIND HEAD+	GBMS3060
2L015	SCREW, S-TIGHT M3X5 BIND HEAD+	GBMS3050
2L016	SCREW, S-TIGHT M3X5 BIND HEAD+	GBMS3050
2L017	SCREW, S-TIGHT M3X8 BIND + CHROME	GBMS3080
2L018	SCREW, S-TIGHT M3X6 BIND HEAD+	GBMS3060
2L021	SCREW, P-TIGHT M3X8 BIND HEAD+	GBCP3080
2L022	SCREW, S-TIGHT M3X6 BIND HEAD+	GBMS3060
2L023	SCREW, S-TIGHT M3X5 BIND HEAD+	GBMS3050
2L033	SCREW, S-TIGHT M3X6 BIND HEAD+	GBMS3060
2L043	SCREW, P-TIGHT M3X8 BIND HEAD+	GBCP3080
2L044	SCREW, P-TIGHT M3X8 BIND HEAD+	GBCP3080
2L045	SCREW, P-TIGHT M3X8 BIND HEAD+	GBCP3080
2L052	SCREW, P-TIGHT M3X6 BIND HEAD+	GBMP3060
2L054	SCREW, P-TIGHT M3X6 BIND HEAD+	GBMP3060
2L061	SCREW, P-TIGHT M3X6 BIND HEAD+	GBMP3060
2L062	SCREW, B-TIGHT M3X8 BIND HEAD +	GBKB3080
2L071	SCREW, P-TIGHT M3X10 WASHER HEAD+	GCMP3100
2L081	SCREW, S-TIGHT M3X5 BIND HEAD +	GBKS3050
2L082	SCREW, S-TIGHT M3X5 BIND HEAD +	GBKS3050
2L100	SCREW, P-TIGHT M3X34 BIND HEAD+	GBMP3340
2L110	SCREW, S-TIGHT M3X10 BIND HEAD+	GBMS3100
2L111	SCREW, P-TIGHT 3X12 BIND HEAD+	GBMP3120
FM1001	DC FAN MOTOR 2410-RL-04W-B30-C01 or	MMEZR12NM003
	DC FAN MOTOR D06K-12TS2 08(AX)	MMEZR12NH002
	PACKING	
S1	GIFT BOX CARTON E9400UD	0VM306791
S2	STYROFOAM E9400UD	0VM101363
S3	SET BAG E7708UA	0DM400731
	ACCESSORIES	
X1	REMOTE CONTROL UNIT 364/CZF01WW	NB108UD
X2	DRY BATTERY R6P/2S or	XB0M451T0001
	DRY BATTERY ES-GR6M-C	XB0M571GLP01
X3	RF CABLE 2.5C-2V	WPZ0901TM002
X4	ACCESSORY BAG E5700UD	0VM415576
X5	AV CORD TSCKA-Y/RW100 or	WPZ0102TM015
	AV CORD RCA(M*2)TO RCA(M*2)	WPZ0102LTE01
X20⚠	OWNER'S MANUAL E9400UD	0VMN04201
X22	QUICK GUIDE E9400UD	1VMN20003

ELECTRICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

NOTES:

1. Parts that are not assigned part numbers (---------) are not available.
2. Tolerance of Capacitors and Resistors are noted with the following symbols.

C.....±0.25%	D.....±0.5%	F.....±1%
G.....±2%	J.....±5%	K.....±10%
M.....±20%	N.....±30%	Z.....+80/-20%

DVD BE MAIN CBA UNIT

Ref. No.	Description	Part No.
	DVD BE MAIN CBA UNIT	N7813FUP

MCV CBA

Ref. No.	Description	Part No.
	MCV CBA Consists of the following	0VSA15239
	MAIN CBA (MCV-A) JACK CBA (MCV-B) FUNCTION CBA (MCV-C) POWER SW CBA (MCV-D) SENSOR CBA	---------- ---------- ---------- ---------- 1VSA10080

MAIN CBA

Ref. No.	Description	Part No.
	MAIN CBA (MCV-A) Consists of the following:	----------
	CAPACITORS	
C051	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C200	ELECTROLYTIC CAP. 100µF/6.3V H7	CE0KMAVSL101
C201	CHIP CERAMIC CAP. B K 0.1µF/50V	CHD1JK30B104
C203	ELECTROLYTIC CAP. 22µF/16V M H7	CE1CMAVSL220
C204	CHIP CERAMIC CAP. B K 0.1µF/50V	CHD1JK30B104
C205	ELECTROLYTIC CAP. 1000µF/6.3V M or	CE0KMASDL102
	ELECTROLYTIC CAP. 1000µF/6.3V M	CE0KMASTL102
C206	CHIP CERAMIC CAP.(1608) CH J 22pF/50V	CHD1JJ3CH220
C207	CHIP CERAMIC CAP.(1608) CH J 22pF/50V	CHD1JJ3CH220
C208	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C210	CHIP CERAMIC CAP. B K 0.1µF/50V	CHD1JK30B104
C213	CHIP CERAMIC CAP. B K 0.1µF/50V	CHD1JK30B104
C214	ELECTROLYTIC CAP. 100µF/6.3V H7	CE0KMAVSL101
C215	CHIP CERAMIC CAP. B K 0.1µF/50V	CHD1JK30B104
C216	ELECTROLYTIC CAP. 100µF/16V M H7	CE1CMAVSL101
C217	ELECTROLYTIC CAP. 47µF/16V M H7	CE1CMAVSL470
C222	ELECTROLYTIC CAP. 100µF/6.3V H7	CE0KMAVSL101
C223	CHIP CERAMIC CAP. B K 0.1µF/50V	CHD1JK30B104
C226	ELECTROLYTIC CAP. 100µF/6.3V H7	CE0KMAVSL101
C227	CHIP CERAMIC CAP. B K 0.1µF/50V	CHD1JK30B104
C301	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL010
C302	CHIP CERAMIC CAP. CH J 390pF/50V	CHD1JJ3CH391
C303	PCB JUMPER D0.6-P5.0	JW5.0T
C304	CHIP CERAMIC CAP.(1608) CH J 100pF/50V or	CHD1JJ3CH101
	CHIP CERAMIC CAP. CG J 100pF/50V	CHD1JJ3CG101
C305	CHIP CERAMIC CAP.(1608) CH J 100pF/50V or	CHD1JJ3CH101
	CHIP CERAMIC CAP. CG J 100pF/50V	CHD1JJ3CG101
C307	CHIP CERAMIC CAP.(1608) B K 1µF/10V	CHD1AK30B105
C308	ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C309	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C310	ELECTROLYTIC CAP. 22µF/6.3V M H7	CE0KMAVSL220
C311	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL010
C312	CHIP CERAMIC CAP.(1608) B K 1µF/10V	CHD1AK30B105
C313	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL010
C314	CHIP CERAMIC CAP.(1608) B K 1µF/10V	CHD1AK30B105
C315	CHIP CERAMIC CAP.(1608) B K 1µF/10V	CHD1AK30B105
C316	CHIP CERAMIC CAP.(1608) B K 1µF/10V	CHD1AK30B105
C317	CHIP CERAMIC CAP.(1608) B K 1µF/10V	CHD1AK30B105
C318	ELECTROLYTIC CAP. 22µF/6.3V M H7	CE0KMAVSL220
C319	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C320	CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C321	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C322	CHIP CERAMIC CAP. CH J 68pF/50V	CHD1JJ3CH680
C324	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C327	ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C328	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL010
C329	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C330	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL010
C331	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C332	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL010
C333	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C336	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C339	CHIP CERAMIC CAP.(1608) B K 0.047µF/25V	CHD1EK30B473
C340	CHIP CERAMIC CAP. B K 0.1µF/50V	CHD1JK30B104
C341	CHIP CERAMIC CAP.(1608) B K 0.047µF/25V	CHD1EK30B473
C342	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C343	ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C346	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C391	ELECTROLYTIC CAP. 100µF/10V M H7	CE1AMAVSL101
C392	ELECTROLYTIC CAP. 470µF/6.3V M or	CE0KMASDL471
	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASTL471
C401	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C404	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C405	ELECTROLYTIC CAP. 22µF/6.3V M H7	CE0KMAVSL220
C406	ELECTROLYTIC CAP. 33µF/6.3V M H7	CE0KMAVSL330
C407	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C408	CHIP CERAMIC CAP. B K 0.012µF/50V	CHD1JK30B123
C409	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C410	CHIP CERAMIC CAP. B K 2700pF/50V	CHD1JK30B272
C411	CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JK30B102
C412	ELECTROLYTIC CAP. 4.7µF/25V M H7	CE1EMAVSL4R7
C413	CHIP CERAMIC CAP. B K 6800pF/50V	CHD1JK30B682
C422	ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C423	ELECTROLYTIC CAP. 220µF/6.3V M H7	CE0KMAVSL221
C424	CERAMIC CAP. B K 470pF/500V or	CCD2JKS0B471
	CERAMIC CAP. B K 470pF/100V	CCD2AKP0B471
C425	FILM CAP.(P) 0.018µF/100V J or	CMA2AJS00183
	FILM CAP.(P) 0.018µF/50V J	CA1J183MS029

Ref. No.	Description	Part No.
C438	ELECTROLYTIC CAP. 4.7µF/25V M H7	CE1EMAVSL4R7
C439	ELECTROLYTIC CAP. 4.7µF/25V M H7	CE1EMAVSL4R7
C440	ELECTROLYTIC CAP. 0.1µF/50V M H7	CE1JMAVSLR10
C441	ELECTROLYTIC CAP. 0.1µF/50V M H7	CE1JMAVSLR10
C448	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMAVSL4R7
C449	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMAVSL4R7
C451	ELECTROLYTIC CAP. 47µF/16V M H7	CE1CMAVSL470
C452	ELECTROLYTIC CAP. 0.1µF/50V M H7	CE1JMAVSLR10
C453	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C454	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL010
C455	ELECTROLYTIC CAP. 22µF/6.3V M H7	CE0KMAVSL220
C456	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C457	ELECTROLYTIC CAP. 4.7µF/25V M H7	CE1EMAVSL4R7
C458	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C459	ELECTROLYTIC CAP. 22µF/6.3V M H7	CE0KMAVSL220
C460	CHIP CERAMIC CAP.(1608) B K 4700pF/50V	CHD1JK30B472
C461	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C462	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C465	ELECTROLYTIC CAP. 4.7µF/25V M H7	CE1EMAVSL4R7
C466	ELECTROLYTIC CAP. 220µF/6.3V M H7	CE0KMAVSL221
C467	CHIP CERAMIC CAP.(1608) B K 0.022µF/50V	CHD1JK30B223
C470	CHIP CERAMIC CAP. B K 0.1µF/50V	CHD1JK30B104
C471	ELECTROLYTIC CAP. 22µF/6.3V M H7	CE0KMAVSL220
C472	CHIP CERAMIC CAP.(1608) B K 4700pF/50V	CHD1JK30B472
C473	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C474	ELECTROLYTIC CAP. 4.7µF/25V M H7	CE1EMAVSL4R7
C475	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C476	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL010
C483	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C485	ELECTROLYTIC CAP. 4.7µF/25V M H7	CE1EMAVSL4R7
C502	ELECTROLYTIC CAP. 220µF/6.3V M H7	CE0KMAVSL221
C505	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C507	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL010
C508	CHIP CERAMIC CAP.(1608) B K 0.022µF/50V	CHD1JK30B223
C509	ELECTROLYTIC CAP. 220µF/6.3V M H7	CE0KMASSL221
C513	CHIP CERAMIC CAP. CH D 10pF/50V or	CHD1JD3CH100
	CHIP CERAMIC CAP. CG D 10pF/50V	CHD1JD3CG100
C521	ELECTROLYTIC CAP. 47µF/25V M H7	CE1EMAVSL470
C522	CHIP CERAMIC CAP.(1608) B K 4700pF/50V	CHD1JK30B472
C523	CHIP CERAMIC CAP.(1608) CH J 100pF/50V or	CHD1JJ3CH101
	CHIP CERAMIC CAP. CG J 100pF/50V	CHD1JJ3CG101
C525	CHIP CERAMIC CAP.(1608) B K 4700pF/50V	CHD1JK30B472
C527	CHIP CERAMIC CAP.(1608) B K 0.047µF/50V	CHD1JK30B473
C529	CHIP CERAMIC CAP.(1608) B K 0.022µF/50V	CHD1JK30B223
C530	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL010
C531	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C532	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C533	ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C534	CHIP CERAMIC CAP. B K 0.1µF/50V	CHD1JK30B104
C535	ELECTROLYTIC CAP. 22µF/10V M H7	CE1AMAVSL220
C536	CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JK30B102
C537	CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JK30B102
C540	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C550	ELECTROLYTIC CAP. 22µF/50V M H7	CE1JMASSL220
C562	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C563	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C571	CHIP CERAMIC CAP. B K 0.1µF/50V	CHD1JK30B104
C572	ELECTROLYTIC CAP. 100µF/6.3V H7	CE0KMAVSL101
C574	CHIP CERAMIC CAP.(1608) B K 4700pF/50V	CHD1JK30B472
C706	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C751	CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JK30B102

Ref. No.	Description	Part No.
C752	CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JK30B102
C762	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMAVSL4R7
C777	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMAVSL4R7
C804	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C805	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C811	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C812	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C814	ELECTROLYTIC CAP. 2.2µF/50V M H7	CE1JMAVSL2R2
C819	CHIP CERAMIC CAP. B K 0.1µF/50V	CHD1JK30B104
C820	ELECTROLYTIC CAP. 2.2µF/50V M H7	CE1JMAVSL2R2
C821	ELECTROLYTIC CAP. 22µF/16V M H7	CE1CMAVSL220
C822	CHIP CERAMIC CAP. B K 0.1µF/50V	CHD1JK30B104
C823	ELECTROLYTIC CAP. 2.2µF/50V M H7	CE1JMAVSL2R2
C825	ELECTROLYTIC CAP. 2.2µF/50V M H7	CE1JMAVSL2R2
C826	ELECTROLYTIC CAP. 2.2µF/50V M H7	CE1JMAVSL2R2
C827	CHIP CERAMIC CAP. B K 0.1µF/50V	CHD1JK30B104
C829	CHIP CERAMIC CAP. B K 0.1µF/50V	CHD1JK30B104
C831	CHIP CERAMIC CAP.(1608) CH J 33pF/50V	CHD1JJ3CH330
C832	CHIP CERAMIC CAP. B K 0.1µF/50V	CHD1JK30B104
C833	CHIP CERAMIC CAP.(1608) CH J 33pF/50V	CHD1JJ3CH330
C834	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C835	ELECTROLYTIC CAP. 470µF/6.3V M or	CE0KMASDL471
	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASTL471
C836	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C839	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL010
C840	CHIP CERAMIC CAP. B K 0.1µF/50V	CHD1JK30B104
C841	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL010
C842	ELECTROLYTIC CAP. 100µF/6.3V H7	CE0KMAVSL101
C843	ELECTROLYTIC CAP. 47µF/16V M H7	CE1CMAVSL470
C844	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C845	CHIP CERAMIC CAP.(1608) CH J 270pF/50V	CHD1JJ3CH271
C846	ELECTROLYTIC CAP. 470µF/10V M or	CE1AMASDL471
	ELECTROLYTIC CAP. 470µF/10V M	CE1AMASTL471
C847	CHIP CERAMIC CAP.(1608) CH J 47pF/50V	CHD1JJ3CH470
C848	CHIP CERAMIC CAP. B K 0.1µF/50V	CHD1JK30B104
C850	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C851	CHIP CERAMIC CAP.(1608) CH J 270pF/50V	CHD1JJ3CH271
C852	CHIP CERAMIC CAP.(1608) CH J 47pF/50V	CHD1JJ3CH470
C853	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C854	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C855	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMASSL4R7
C856	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMASSL4R7
C859	CHIP CERAMIC CAP. B K 0.1µF/50V	CHD1JK30B104
C860	ELECTROLYTIC CAP. 2.2µF/50V M H7	CE1JMASSL2R2
C861	ELECTROLYTIC CAP. 2.2µF/50V M H7	CE1JMAVSL2R2
C862	ELECTROLYTIC CAP. 2.2µF/50V M H7	CE1JMAVSL2R2
C900	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C901	ELECTROLYTIC CAP. 0.33µF/50V M H7	CE1JMAVSLR33
C902	ELECTROLYTIC CAP. 3.3µF/25V M H7	CE1EMAVSL3R3
C903	CHIP CERAMIC CAP. B K 0.1µF/50V	CHD1JK30B104
C904	CHIP CERAMIC CAP.(1608) B K 0.022µF/25V	CHD1EK30B223
C905	ELECTROLYTIC CAP. 2.2µF/50V M H7	CE1JMAVSL2R2
C906	CHIP CERAMIC CAP. B K 0.1µF/50V	CHD1JK30B104
C907	CHIP CERAMIC CAP. B K 0.033µF/25V	CHD1EK30B333
C908	ELECTROLYTIC CAP. 2.2µF/50V M H7	CE1JMAVSL2R2
C909	ELECTROLYTIC CAP. 2.2µF/50V M H7	CE1JMAVSL2R2
C910	ELECTROLYTIC CAP. 2.2µF/50V M H7	CE1JMAVSL2R2
C911	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMAVSL4R7
C912	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL010
C913	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL010
C916	CHIP CERAMIC CAP.(1608) CH J 1000pF/50V	CHD1JJ3CH102

Ref. No.	Description	Part No.
C917	CHIP CERAMIC CAP. B K 0.1µF/50V	CHD1JK30B104
C918	CHIP CERAMIC CAP. B K 0.1µF/50V	CHD1JK30B104
C919	ELECTROLYTIC CAP. 0.33µF/50V M H7	CE1JMAVSLR33
C920	CHIP CERAMIC CAP. B K 0.1µF/50V	CHD1JK30B104
C922	ELECTROLYTIC CAP. 2.2µF/50V M H7	CE1JMASSL2R2
C923	ELECTROLYTIC CAP. 0.22µF/50V M or	CE1JMASDLR22
	ELECTROLYTIC CAP. 0.22µF/50V M	CE1JMASTLR22
C925	ELECTROLYTIC CAP. 0.47µF/50V M H7	CE1JMAVSLR47
C926	ELECTROLYTIC CAP. 100µF/6.3V H7	CE0KMAVSL101
C927	CHIP CERAMIC CAP. B K 0.1µF/50V	CHD1JK30B104
C928	CHIP CERAMIC CAP.(1608) CH J 47pF/50V	CHD1JJ3CH470
C1350	CHIP CERAMIC CAP. B K 5600pF/50V	CHD1JK30B562
C1351	CHIP CERAMIC CAP. B K 0.1µF/50V	CHD1JK30B104
C1352	ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C1353	CHIP CERAMIC CAP. B K 4700pF/50V	CHD1JM30B472
C1354	CHIP CERAMIC CAP.(1608) CH J 100pF/50V or	CHD1JJ3CH101
	CHIP CERAMIC CAP. CG J 100pF/50V	CHD1JJ3CG101
C1355	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
C1401	CHIP CERAMIC CAP. B K 0.1µF/50V	CHD1JK30B104
C1407	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
C1421	CHIP CERAMIC CAP. B K 0.1µF/50V	CHD1JK30B104
C1441	CHIP CERAMIC CAP. B K 0.1µF/50V	CHD1JK30B104
C1442	ELECTROLYTIC CAP. 470µF/6.3V M or	CE0KMASDL471
	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASTL471
C1461	ELECTROLYTIC CAP. 0.1µF/50V M H7	CE1JMAVSLR10
C1462	ELECTROLYTIC CAP. 470µF/6.3V M or	CE0KMASDL471
	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASTL471
C1481	ELECTROLYTIC CAP. 0.1µF/50V M H7	CE1JMAVSLR10
C1482	ELECTROLYTIC CAP. 470µF/6.3V M or	CE0KMASDL471
	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASTL471
C1522	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C1523	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C1524	ELECTROLYTIC CAP. 100µF/6.3V H7	CE0KMAVSL101
C1531	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1532	ELECTROLYTIC CAP. 22µF/6.3V M H7	CE0KMAVSL220
C2002	CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JK30B102
C2004	ELECTROLYTIC CAP. 100µF/6.3V H7	CE0KMAVSL101
C2012	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C2016	ELECTROLYTIC CAP. 100µF/16V M H7	CE1CMAVSL101
	CONNECTORS	
CN201	FMN CONNECTOR, TOP 28P 28FMN-BTRK	JCFNG28JG002
CN202	FMN CONNECTOR, TOP 18P 18FMN-BTRK	JCFNG18JG002
CN1604	CONNECTOR BASE 4P B4B-XH-A	J3XHC04JG007
CN1606	PH CONNECTOR, TOP 2P B2B-PH-K-S	J3PHC02JG001
CN1608	CONNECTOR BASE, 18P TUC-P18P-B1	J3TUA18TG001
CN1609	FE CONNECTOR, TOP 8P 08FE-BT-VK-N	JCFEJ08JG001
	DIODES	
D052	ZENER DIODE DZ-10BSBT265 or	NDTB00DZ10BS
	ZENER DIODE MTZJT-7710B	QDTB00MTZJ10
D080	RECTIFIER DIODE 1N4005 or	NDQZ001N4005
	RECTIFIER DIODE 1N4005	NDWZ001N4005
D081	PCB JUMPER D0.6-P10.0	JW10.0T
D100	SWITCHING DIODE 1N4148M or	NDTZ01N4148M
	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D101	SWITCHING DIODE 1N4148M or	NDTZ01N4148M
	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D202	ZENER DIODE DZ-3.0BSAT265	NDTA0DZ3R0BS
D203	ZENER DIODE DZ-11BSBT265 or	NDTB00DZ11BS
	ZENER DIODE MTZJT-7711B	QDTB00MTZJ11
D204	SWITCHING DIODE 1N4148M or	NDTZ01N4148M
	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D205	SWITCHING DIODE 1N4148M or	NDTZ01N4148M
	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D501	SWITCHING DIODE 1N4148M or	NDTZ01N4148M
	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D502	CARBON RES. 1/6W J 1k Ω or	RCX6JATZ0102
	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
D504	ZENER DIODE DZ-18BSBT265 or	NDTB00DZ18BS
	ZENER DIODE MTZJT-7718B	QDTB00MTZJ18
D555	LED SIR-563ST3F P or	QPQPS1R563ST
	LED MIE-534A2 or	NPZZM1E534A2
	LED SIR-563ST3F Q	QPQQS1R563ST
D564	LED(GREEN) LT6321-41 or	NPQZ00LT6321
	LED(GREEN) 204-10GD/S957 or	NPQZ10GDS957
	LED(GREEN) LTL-4234M1	NPZZ0LTL4234
D565	LED(GREEN) LT6321-41 or	NPQZ00LT6321
	LED(GREEN) 204-10GD/S957 or	NPQZ10GDS957
	LED(GREEN) LTL-4234M1	NPZZ0LTL4234
D580	PCB JUMPER D0.6-P5.0	JW5.0T
D581	PCB JUMPER D0.6-P5.0	JW5.0T
D701	ZENER DIODE DZ-33BSDT265 or	NDTD00DZ33BS
	ZENER DIODE MTZJT-7733D	QDTD00MTZJ33
D800	ZENER DIODE DZ-5.6BSCT265 or	NDTC0DZ5R6BS
	ZENER DIODE MTZJT-775.6C	QDTC0MTZJ5R6
D1101	RECTIFIER DIODE RL151	NDQZ000RL151
D1103	RECTIFIER DIODE RL151	NDQZ000RL151
D1105	SWITCHING DIODE 1N4148M or	NDTZ01N4148M
	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D2012	SWITCHING DIODE 1N4148M or	NDTZ01N4148M
	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D2014	SWITCHING DIODE 1N4148M or	NDTZ01N4148M
	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D2015	RECTIFIER DIODE RL201	NDQZ000RL201
D2016	SWITCHING DIODE 1N4148M or	NDTZ01N4148M
	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
	ICS	
IC200	IC(CPU) M38039MC-176HP	QSZAB0RHT032
IC201	IC(RESET) PST597INR	QSZBA0TMM105
IC202	VOLTAGE REGULATOR PQ070XF01SZ	QSZBA0SSH026
IC203	VOLTAGE REGULATOR PQ070XF01SZ	QSZBA0SSH026
IC301	IC:Y/C/A LA71205M-MPB-E	QSZBA0RSY037
IC451	IC:HIFI LA72670BM-MPB-E	QSZBA0RSY039
IC501	MICROCONTROLLER 8BIT MN101D08DEE3	QSZAD0RMS025
IC571	FL DRIVER IC PT6313-S-TP	NSZBA0TG2006
IC800	IC(VIDEO SW) MM1657XJBE	QSZBA0TMM100
IC801	IC:SWITCHING TC4052BF(EL)	QSZBA0TTS096
IC802	IC:OP AMP NJM4558D or	QSZBA0SJR006
	IC:OP AMP KIA4558P	NSZBA0SJY004
IC803	IC(OP AMP) NJM2100D	QSZBA0SJR069
IC804	IC:OP AMP NJM4558D or	QSZBA0SJR006
	IC:OP AMP KIA4558P	NSZBA0SJY004
IC805	IC:SWITCHING TC4052BF(EL)	QSZBA0TTS096
IC900	IC:MTS DECORDER AN5832SA-E1	QSZBA0TMS003
IC1405	DRIVER FOR DVD MM1637XVBE	QSZBA0TMM102
IC1406	IC:SWITCH TC4053BF(N) or	QSMBA0STS002
	IC:SWITCH BU4053BCF or	QSMDA0SRM010
	IC:ANALOG MULTIPLEXERS CD4053BCSJX	NSZBA0TF3071
	COILS	
L200	INDUCTOR(100µH K) LAP02TA101K	LLAXKATTU101
L201	PCB JUMPER D0.6-P5.0	JW5.0T

Ref. No.	Description	Part No.
L202	PCB JUMPER D0.6-P5.0	JW5.0T
L251	PCB JUMPER D0.6-P5.0	JW5.0T
L303	INDUCTOR(100µH K) LAP02TA101K	LLAXKATTU101
L304	CHOKE COIL 47µH-K or	LLBD00PKV007
	CHOKE COIL 47µH-K or	LLBD00PKV005
	CHOKE COIL 47µH-K	LLBD00PKT001
L421	INDUCTOR 47µH-K-5FT	LLARKBSTU470
L422	PCB JUMPER D0.6-P5.0	JW5.0T
L451	PCB JUMPER D0.6-P5.0	JW5.0T
L501	PCB JUMPER D0.6-P5.0	JW5.0T
L502	CHOKE COIL 47µH-K or	LLBD00PKV007
	CHOKE COIL 47µH-K or	LLBD00PKV005
	CHOKE COIL 47µH-K	LLBD00PKT001
L503	INDUCTOR 12µH-K-26T	LLAXKATTU120
L504	PCB JUMPER D0.6-P5.0	JW5.0T
L771	PCB JUMPER D0.6-P5.0	JW5.0T
L800	PCB JUMPER D0.6-P5.0	JW5.0T
L900	PCB JUMPER D0.6-P5.0	JW5.0T
L901	INDUCTOR 4.7µH-K-26T	LLAXKATTU4R7
L1351	INDUCTOR(0.47µH K) LAP02TAR47K	LLAXKATTUR47
L1401	PCB JUMPER D0.6-P5.0	JW5.0T
L1402	PCB JUMPER D0.6-P5.0	JW5.0T
L1441	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
L1461	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
L1481	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
L1521	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
L1522	CHOKE COIL 47µH-K or	LLBD00PKV007
	CHOKE COIL 47µH-K or	LLBD00PKV005
	CHOKE COIL 47µH-K	LLBD00PKT001
L2001	INDUCTOR(100µH K) LAP02TA101K	LLAXKATTU101
	TRANSISTORS	
Q052	RES. BUILT-IN TRANSISTOR KRC103M or	NQSZ0KRC103M
	RES. BUILT-IN TRANSISTOR BA1F4M-T	QQSZ00BA1F4M
Q055	TRANSISTOR KTC3198(Y) or	NQSY0KTC3198
	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
	TRANSISTOR 2SC536NF-NPA-AT or	QQSFC536NNPA
	TRANSISTOR 2SC536NG-NPA-AT	QQSGC536NNPA
Q056	TRANSISTOR KTC3203(Y) or	NQSY0KTC3203
	TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
	TRANSISTOR KTC3203(0) or	NQS00KTC3203
	TRANSISTOR 2SC2120-Y(TPE2)	QQSY02SC2120
Q200	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q201	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q202	TRANSISTOR KTA1267(GR)	NQS10KTA1267
Q203	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q204	TRANSISTOR KTC3198(Y) or	NQSY0KTC3198

Ref. No.	Description	Part No.
	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
	TRANSISTOR 2SC536NF-NPA-AT or	QQSFC536NNPA
	TRANSISTOR 2SC536NG-NPA-AT	QQSGC536NNPA
Q301	TRANSISTOR KTA1266(GR) or	NQS40KTA1266
	TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q302	TRANSISTOR KTC3193(Y)	NQSY0KTC3193
Q303	TRANSISTOR KTC3193(Y)	NQSY0KTC3193
Q391	TRANSISTOR KTA1266(GR) or	NQS40KTA1266
	TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q421	TRANSISTOR KTA1266(GR) or	NQS40KTA1266
	TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q422	TRANSISTOR KTC3203(Y) or	NQSY0KTC3203
	TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
	TRANSISTOR KTC3203(0) or	NQS00KTC3203
	TRANSISTOR 2SC2120-Y(TPE2)	QQSY02SC2120
Q425	RES. BUILT-IN TRANSISTOR KRA103M or	NQSZ0KRA103M
	RES. BUILT-IN TRANSISTOR BN1F4M-T	QQSZ00BN1F4M
Q426	CHIP TRANSISTOR RN1511(TE85R)	QQ2Z00RN1511
Q501	RES. BUILT-IN TRANSISTOR KRC108M	NQSZ0KRC108M
Q502	TRANSISTOR KTA1267(GR)	NQS10KTA1267
Q506	PHOTO TRANSISTOR PT204-6B-12 or	NPWZT2046B12
	PHOTO TRANSISTOR MID-32A22F	NPWZ1D32A22F
Q561	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q562	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q564	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q800	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q801	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q802	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q804	TRANSISTOR KTA1266(GR) or	NQS40KTA1266
	TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q805	TRANSISTOR KTC3198(Y) or	NQSY0KTC3198

Ref. No.	Description	Part No.
	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
	TRANSISTOR 2SC536NF-NPA-AT or	QQSFC536NNPA
	TRANSISTOR 2SC536NG-NPA-AT	QQSGC536NNPA
Q806	TRANSISTOR KTC3198(Y) or	NQSY0KTC3198
	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
	TRANSISTOR 2SC536NF-NPA-AT or	QQSFC536NNPA
	TRANSISTOR 2SC536NG-NPA-AT	QQSGC536NNPA
Q1005	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q1006	TRANSISTOR S2Y52(FUNAI)	QQWZ000S2Y52
Q1351	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q1604	TRANSISTOR S2Y52(FUNAI)	QQWZ000S2Y52
	RESISTORS	
R010	CARBON RES. 1/4W J 1.8k Ω	RCX4JATZ0182
R011	CARBON RES. 1/4W J 1.8k Ω	RCX4JATZ0182
R056	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R057	CARBON RES. 1/6W J 150 Ω or	RCX6JATZ0151
	CARBON RES. 1/4W J 150 Ω	RCX4JATZ0151
R063	PCB JUMPER D0.6-P5.0	JW5.0T
R073	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R075	CARBON RES. 1/6W J 4.7k Ω or	RCX6JATZ0472
	CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R092	CARBON RES. 1/4W J 8.2k Ω	RCX4JATZ0822
R095	CARBON RES. 1/4W J 8.2k Ω	RCX4JATZ0822
R200	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R201	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R202	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R203	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R204	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R205	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R206	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R207	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R208	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R209	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R210	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R212	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R213	CHIP RES.(1608) 1/10W J 220 Ω	RRXAJR5Z0221
R214	CHIP RES.(1608) 1/10W J 220 Ω	RRXAJR5Z0221
R215	CHIP RES.(1608) 1/10W J 6.2k Ω	RRXAJR5Z0622
R216	CHIP RES.(1608) 1/10W J 6.2k Ω	RRXAJR5Z0622
R217	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R218	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R219	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R220	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R222	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R223	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R224	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R225	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R226	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R227	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R229	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R230	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473

Ref. No.	Description	Part No.
R231	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R232	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R233	CHIP RES.(1608) 1/10W J 10M Ω	RRXAJR5Z0106
R234	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R235	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R236	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R237	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R238	PCB JUMPER D0.6-P5.0	JW5.0T
R239	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R240	CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R241	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R243	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R244	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R245	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R246	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R247	PCB JUMPER D0.6-P5.0	JW5.0T
R248	PCB JUMPER D0.6-P5.0	JW5.0T
R249	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R250	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R251	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R252	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R253	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R254	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R255	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R256	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R257	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R258	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R259	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R260	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R261	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R262	CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJR5Z0682
R263	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R264	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R265	CHIP RES.(1608) 1/10W J 620 Ω	RRXAJR5Z0621
R266	CHIP RES.(1608) 1/10W J 300 Ω	RRXAJR5Z0301
R267	CHIP RES.(1608) 1/10W J 360 Ω	RRXAJR5Z0361
R268	CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJR5Z0332
R269	CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJR5Z0682
R270	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R272	CHIP RES.(1608) 1/10W J 620 Ω	RRXAJR5Z0621
R273	CHIP RES.(1608) 1/10W J 300 Ω	RRXAJR5Z0301
R274	CHIP RES.(1608) 1/10W J 360 Ω	RRXAJR5Z0361
R275	CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJR5Z0332
R276	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R277	CHIP RES.(1608) 1/10W J 470 Ω	RRXAJR5Z0471
R278	CHIP RES.(1608) 1/10W J 470 Ω	RRXAJR5Z0471
R279	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R280	CHIP RES.(1608) 1/10W F 9.1k Ω	RRXAFR5Z9101
R281	CHIP RES. 1/10W F 15k Ω	RRXAFR5Z0153
R282	CHIP RES.(1608) 1/10W F 470 Ω	RRXAFR5Z4700
R283	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R284	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R285	CHIP RES.(1608) 1/10W F 10k Ω	RRXAFR5Z0103
R286	CHIP RES.(1608) 1/10W F 10k Ω	RRXAFR5Z0103
R288	CHIP RES.(1608) 1/10W F 470 Ω	RRXAFR5Z4700
R289	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R290	CHIP RES.(1608) 1/10W J 220 Ω	RRXAJR5Z0221
R291	CHIP RES.(1608) 1/10W J 220 Ω	RRXAJR5Z0221
R292	CHIP RES. 1/10W F 110 Ω	RRXAFR5Z1100
R293	CHIP RES.(1608) 1/10W F 75 Ω	RRXAFR5Z75R0
R298	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000

Ref. No.	Description	Part No.
R301	CHIP RES.(1608) 1/10W J 39k Ω	RRXAJR5Z0393
R302	CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJR5Z0332
R304	CHIP RES.(1608) 1/10W J 1.2k Ω	RRXAJR5Z0122
R306	CHIP RES.(1608) 1/10W J 3.9M Ω	RRXAJR5Z0395
R307	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R308	CHIP RES.(1608) 1/10W J 82k Ω	RRXAJR5Z0823
R309	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R310	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R311	CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJR5Z0182
R312	CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJR5Z0182
R313	CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJR5Z0182
R314	CHIP RES.(1608) 1/10W J 680k Ω	RRXAJR5Z0684
R315	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R316	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R317	CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJR5Z0822
R318	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R319	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R320	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R321	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R322	CHIP RES.(1608) 1/10W J 18k Ω	RRXAJR5Z0183
R323	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R324	CHIP RES.(1608) 1/10W J 18k Ω	RRXAJR5Z0183
R326	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R327	CHIP RES.(1608) 1/10W F 1.5k Ω	RRXAFR5Z1501
R391	CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561
R392	CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561
R395	PCB JUMPER D0.6-P5.0	JW5.0T
R397	CHIP RES.(1608) 1/10W J 220 Ω	RRXAJR5Z0221
R401	CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJR5Z0682
R402	CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJR5Z0822
R409	CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJR5Z0822
R410	CHIP RES.(1608) 1/10W J 12k Ω	RRXAJR5Z0123
R411	CHIP RES.(1608) 1/10W J 330k Ω	RRXAJR5Z0334
R412	CHIP RES.(1608) 1/10W J 150 Ω	RRXAJR5Z0151
R413	CHIP RES.(1608) 1/10W J 18k Ω	RRXAJR5Z0183
R414	CHIP RES.(1608) 1/10W J 910 Ω	RRXAJR5Z0911
R415	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R416	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R421	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R422	CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R424	CARBON RES. 1/6W J 47k Ω or	RCX6JATZ0473
	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R425	CARBON RES. 1/6W J 100 Ω or	RCX6JATZ0101
	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R426	CARBON RES. 1/6W J 820 Ω or	RCX6JATZ0821
	CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821
R451	CHIP RES.(1608) 1/10W J 12k Ω	RRXAJR5Z0123
R452	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R453	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R454	CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJR5Z0682
R455	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R456	CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJR5Z0682
R457	CHIP RES.(1608) 1/10W J 470 Ω	RRXAJR5Z0471
R458	CHIP RES.(1608) 1/10W J 2.7k Ω	RRXAJR5Z0272
R459	CHIP RES.(1608) 1/10W J 39k Ω	RRXAJR5Z0393
R463	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R464	CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJR5Z0682
R465	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R466	CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJR5Z0682
R468	CHIP RES.(1608) 1/10W J 470 Ω	RRXAJR5Z0471
R469	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102

Ref. No.	Description	Part No.
R470	CHIP RES.(1608) 1/10W J 470 Ω	RRXAJR5Z0471
R471	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R484	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R485	CHIP RES.(1608) 1/10W J 15k Ω	RRXAJR5Z0153
R486	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R487	CHIP RES.(1608) 1/10W J 15k Ω	RRXAJR5Z0153
R502	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R503	CHIP RES.(1608) 1/10W J 470 Ω	RRXAJR5Z0471
R504	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R506	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R511	CHIP RES.(1608) 1/10W J 39k Ω	RRXAJR5Z0393
R517	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R518	CHIP RES.(1608) 1/10W J 220k Ω	RRXAJR5Z0224
R521	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R523	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R524	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R525	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R526	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R527	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R528	CARBON RES. 1/6W J 10k Ω	RCX6JATZ0103
R531	CHIP RES.(1608) 1/10W F 4.7k Ω	RRXAFR5Z4701
R532	CHIP RES.(1608) 1/10W F 1.5k Ω	RRXAFR5Z1501
R533	CHIP RES.(1608) 1/10W F 22k Ω	RRXAFR5Z2202
R534	CHIP RES.(1608) 1/10W F 470 Ω	RRXAFR5Z4700
R535	CHIP RES.(1608) 1/10W F 10k Ω	RRXAFR5Z0103
R536	CHIP RES.(1608) 1/10W F 3.6k Ω	RRXAFR5Z3601
R537	CHIP RES.(1608) 1/10W J 33k Ω	RRXAJR5Z0333
R540	CHIP RES.(1608) 1/10W J 390k Ω	RRXAJR5Z0394
R541	CHIP RES.(1608) 1/10W J 390k Ω	RRXAJR5Z0394
R542	CARBON RES. 1/4W J 270 Ω	RCX4JATZ0271
R543	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R544	CHIP RES.(1608) 1/10W J 18k Ω	RRXAJR5Z0183
R545	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R546	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R551	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R571	CARBON RES. 1/6W J 10 Ω or	RCX6JATZ0100
	CARBON RES. 1/4W J 10 Ω	RCX4JATZ0100
R572	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R573	CARBON RES. 1/6W J 150 Ω or	RCX6JATZ0151
	CARBON RES. 1/4W J 150 Ω	RCX4JATZ0151
R574	CHIP RES.(1608) 1/10W J 3.9k Ω	RRXAJR5Z0392
R575	CARBON RES. 1/6W J 150 Ω or	RCX6JATZ0151
	CARBON RES. 1/4W J 150 Ω	RCX4JATZ0151
R576	CHIP RES.(1608) 1/10W J 3.9k Ω	RRXAJR5Z0392
R579	CARBON RES. 1/6W J 150 Ω or	RCX6JATZ0151
	CARBON RES. 1/4W J 150 Ω	RCX4JATZ0151
R580	CHIP RES.(1608) 1/10W J 3.9k Ω	RRXAJR5Z0392
R585	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R586	CHIP RES.(1608) 1/10W J 1.2k Ω	RRXAJR5Z0122
R587	CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJR5Z0152
R588	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R590	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R591	CHIP RES.(1608) 1/10W J 1.2k Ω	RRXAJR5Z0122
R593	CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJR5Z0182
R594	CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJR5Z0182
R600	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R602	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R610	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R612	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R613	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R614	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103

Ref. No.	Description	Part No.
R615	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R618	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R620	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R626	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R640	CHIP RES.(1608) 1/10W J 3.9k Ω	RRXAJR5Z0392
R702	CARBON RES. 1/4W J 1.8k Ω	RCX4JATZ0182
R751	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R770	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R777	CARBON RES. 1/6W J 27k Ω or	RCX6JATZ0273
	CARBON RES. 1/4W J 27k Ω	RCX4JATZ0273
R778	CARBON RES. 1/6W J 10k Ω	RCX6JATZ0103
R806	CHIP RES.(1608) 1/10W J 180k Ω	RRXAJR5Z0184
R807	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R808	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R809	CHIP RES.(1608) 1/10W J 180k Ω	RRXAJR5Z0184
R810	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R811	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R823	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R824	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R825	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R826	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R833	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R834	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R835	CHIP RES.(1608) 1/10W F 33k Ω	RRXAFR5Z3302
R836	CHIP RES.(1608) 1/10W F 33k Ω	RRXAFR5Z3302
R837	CHIP RES.(1608) 1/10W F 10k Ω	RRXAFR5Z0103
R838	CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJR5Z0682
R839	CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJR5Z0682
R840	CHIP RES.(1608) 1/10W F 10k Ω	RRXAFR5Z0103
R841	CHIP RES.(1608) 1/10W F 130k Ω	RRXAFR5Z0134
R842	CHIP RES.(1608) 1/10W F 10k Ω	RRXAFR5Z0103
R843	CHIP RES.(1608) 1/10W F 10k Ω	RRXAFR5Z0103
R844	CHIP RES.(1608) 1/10W F 130k Ω	RRXAFR5Z0134
R845	CHIP RES.(1608) 1/10W J 470 Ω	RRXAJR5Z0471
R846	CHIP RES.(1608) 1/10W J 470 Ω	RRXAJR5Z0471
R847	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R850	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R851	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R852	CHIP RES. 1/10W F 6.8k Ω	RRXAFR5Z6801
R853	CHIP RES.(1608) 1/10W J 13k Ω	RRXAJR5Z0133
R854	CHIP RES.(1608) 1/10W F 13k Ω	RRXAFR5Z0133
R855	CHIP RES. 1/10W F 6.8k Ω	RRXAFR5Z6801
R856	CHIP RES.(1608) 1/10W F 13k Ω	RRXAFR5Z0133
R857	CHIP RES.(1608) 1/10W F 13k Ω	RRXAFR5Z0133
R858	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R859	CHIP RES.(1608) 1/10W J 470 Ω	RRXAJR5Z0471
R860	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R861	CHIP RES.(1608) 1/10W J 470 Ω	RRXAJR5Z0471
R862	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R863	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R866	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R867	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R868	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R869	CHIP RES.(1608) 1/10W J 220 Ω	RRXAJR5Z0221
R870	CHIP RES.(1608) 1/10W J 220 Ω	RRXAJR5Z0221
R871	CHIP RES.(1608) 1/10W J 68k Ω	RRXAJR5Z0683
R872	CHIP RES.(1608) 1/10W J 18k Ω	RRXAJR5Z0183
R873	CHIP RES.(1608) 1/10W J 68k Ω	RRXAJR5Z0683
R874	CHIP RES.(1608) 1/10W J 18k Ω	RRXAJR5Z0183
R875	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R876	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472

Ref. No.	Description	Part No.
R900	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R902	CHIP RES.(1608) 1/10W J 180k Ω	RRXAJR5Z0184
R903	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R904	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R907	CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJR5Z0332
R908	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R909	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R910	CHIP RES.(1608) 1/10W J 220 Ω	RRXAJR5Z0221
R911	CHIP RES.(1608) 1/10W J 220 Ω	RRXAJR5Z0221
R912	CHIP RES.(1608) 1/10W J 330 Ω	RRXAJR5Z0331
R913	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R914	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R1002	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R1025	METAL OXIDE FILM RES. 1W J 330 Ω or	RN01JZQZ0331
	FIXED METAL OXIDE FILM RES. 1W J 330 Ω	RN01JZPZ0331
R1041	CARBON RES. 1/4W J 4.7 Ω	RCX4JATZ04R7
R1042	CARBON RES. 1/4W J 4.7 Ω	RCX4JATZ04R7
R1044	CARBON RES. 1/6W J 4.7k Ω or	RCX6JATZ0472
	CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R1045	CARBON RES. 1/4W J 150 Ω	RCX4JATZ0151
R1046	CARBON RES. 1/4W J 150 Ω	RCX4JATZ0151
R1047	CARBON RES. 1/4W J 270 Ω	RCX4JATZ0271
R1048	CARBON RES. 1/4W J 270 Ω	RCX4JATZ0271
R1076	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R1078	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R1087	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R1351	CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJR5Z0182
R1352	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R1353	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R1354	CHIP RES.(1608) 1/10W J 220 Ω	RRXAJR5Z0221
R1355	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R1356	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R1401	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R1402	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R1403	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R1404	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R1405	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R1406	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R1407	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R1408	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R1410	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R1421	CHIP RES.(1608) 1/10W F 200 Ω	RRXAFR5Z2000
R1441	CHIP RES.(1608) 1/10W F 200 Ω	RRXAFR5Z2000
R1443	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R1461	CHIP RES.(1608) 1/10W F 200 Ω	RRXAFR5Z2000
R1462	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R1481	CHIP RES.(1608) 1/10W F 200 Ω	RRXAFR5Z2000
R1482	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R1521	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R2005	CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJR5Z0682
R2025	PCB JUMPER D0.6-P5.0	JW5.0T
R2028	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R2031	CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R2033	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R2041	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R2087	CARBON RES. 1/6W J 1k Ω or	RCX6JATZ0102
	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R2088	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R2089	CARBON RES. 1/6W J 4.7k Ω or	RCX6JATZ0472
	CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R2091	CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJR5Z0682

Ref. No.	Description	Part No.
R2092	CARBON RES. 1/4W J 22 Ω	RCX4JATZ0220
R2098	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R2099	CARBON RES. 1/4W J 82 Ω	RCX4JATZ0820
	SWITCHES	
SW201	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW203	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW205	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW502	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW505	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW508	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW509	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW511	LEAF SWITCH MXS01830MVP0	SSC0101MCE03
SW512	ROTARY MODE SWITCH SSS-53MD	SSR0106KB003
SW513	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW514	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW515	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW516	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
	MISCELLANEOUS	
2B16	BUSH, LED(F) H3700UD	0VM409508
2B17	SHIELD ASSEMBLY H9200UD	0VM413279
FIP502	VACUUM FLUORESCENT DISPLAFIP_R1	TVFD1C0FT044
J205	ELECTROLYTIC CAP. 4.7µF/25V M H7	CE1EMAVSL4R7
JC2	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
JC3	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
JC5	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
JC6	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
JC7	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
JC8	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
JC9	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
JC10	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
JC11	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
JC12	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
JC13	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
JC14	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
JK751	RCA JACK MSP-213V1-324-B NI L or	JXRL030LY104
	RCA JACK MSP-213V1-324 PBSN	JXRL030LY064
JK804	RCA JACK MSP-213V3-324-B NI L or	JYRL030LY025
	RCA JACK MSP-213V3-324 PBSN	JYRL030LY021
JK805	RCA JACK MSP-382V-12 PBSN	JXRL020LY063
JK1202	RCA JACK(BLACK) MSP-281V2-B	JXRL010LY062
JK1401	S TYPE JACK(2P) MDC-021V-AA LF	JYEL040LY004
JK1403	RCA JACK MSP-213V5-652-B NI L or	JXRL030LY103
	RCA JACK MSP-213V1-652 PBSN	JXRL030LY061
RM2001	REMOTE RECEIVER MIM-93M6DKF	USESJRSUNT01
TP200	PCB JUMPER D0.6-P6.0	JW6.0T
TP201	PCB JUMPER D0.6-P5.0	JW5.0T
TP202	PCB JUMPER D0.6-P6.5	JW6.5T
TP203	PCB JUMPER D0.6-P6.5	JW6.5T
TP301	PCB JUMPER D0.6-P5.0	JW5.0T
TP302	PCB JUMPER D0.6-P5.0	JW5.0T
TP452	PCB JUMPER D0.6-P30.0	JW30.0T
TP502	PCB JUMPER D0.6-P5.0	JW5.0T
TP505	PCB JUMPER D0.6-P15.0	JW15.0T
TP506	PCB JUMPER D0.6-P5.0	JW5.0T
TP507	PCB JUMPER D0.6-P15.0	JW15.0T
TP513	PCB JUMPER D0.6-P5.0	JW5.0T
TP751	PCB JUMPER D0.6-P5.0	JW5.0T
TP753	PCB JUMPER D0.6-P5.0	JW5.0T
TP754	PCB JUMPER D0.6-P5.0	JW5.0T
TU900	TUNER UNIT VH025AFE or	UTUNNTUSP026
	TUNER UNIT TMZH2X022A	UTUNNTUAL039
VR501	CARBON P.O.T. 100k Ω B	VRCB104HH014
W01	FFC CABLE 28P FFC/P1.00/170	WX1E9400-011
W02	FFC CABLE 18P FFC/P1.00/45	WX1E9400-012
W06	FFC CABLE 40P FFC/P0.50/110	WX1E9400-016
W005	WIRE ASSEMBLY 4P AV-F/E POWER	WX1E9400-004
X200	CERAMIC RESONATOR CSTLS8M00G53-B0	FY0805PMR001
X201	X'TAL 32.768kHz(20PPM) or	FXC323LDS002
	X'TAL 32.768kHz(20PPM) or	FXC323LQUA01
	X'TAL 32.768kHz(20PPM)	FXC323LCHE01
X301	X'TAL 3.579545MHz(20PPM) or	FXC355LLN003
	X'TAL 3.579545MHz(20PPM) or	FXC355LCHE01
	X'TAL 3.579545MHz(20PPM)	FXC355LDS001

JACK CBA

Ref. No.	Description	Part No.
	JACK CBA (MCV-B) Consists on the following:	----------
	CAPACITORS	
C816	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
C818	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
	CONNECTOR	
CN1605	FE CONNECTOR, TOP 8P 08FE-BT-VK-N	JCFEJ08JG001
	RESISTORS	
R800	CHIP RES.(1608) 1/10W J 180k Ω	RRXAJR5Z0184
R801	CHIP RES.(1608) 1/10W J 180k Ω	RRXAJR5Z0184
R802	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R803	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R804	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R805	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R812	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R813	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R815	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
	MISCELLANEOUS	
JK800	RCA JACK(RED) MTJ-032-11A-31 FE01	JYRL010LY024
JK801	RCA JACK(WHITE) MTJ-032-11B-41 FE01	JXRL010LY102
JK803	RCA JACK(YELLOW) MTJ-032-11B-40 FE01	JXRL010LY101
JK806	S TYPE JACK MDC-050V-2.4	JXEL040LY001

Ref. No.	Description	Part No.
W03	FFC CABLE 8P FFC/P1.25/120	WX1E9400-013

FUNCTION CBA

Ref. No.	Description	Part No.
	FUNCTION CBA (MCV-C) Consists on the following:	----------
	RESISTOR	
R271	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
	SWITCHES	
SW206	TACT SWITCH KSM0614B	SST0101HH013
SW207	TACT SWITCH KSM0614B	SST0101HH013
	MISCELLANEOUS	
W002	PARALLEL WIRE, 3P AWG26#2651/P2.0/80	WX1E9400-003

POWER SW CBA

Ref. No.	Description	Part No.
	POWER SW CBA (MCV-D) Consists on the following:	----------
	DIODES	
D567	LED(RED) 204HD/E or	NPQZ00204HDE
	LED(RED) LTL-4211N	NPQZLTL4211N
	SWICHES	
SW501	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
	MISCELLANEOUS	
W001	PARALLEL WIRE, 3P AWG26#2651/P2.0/100	WX1E9400-001

SENSOR CBA

Ref. No.	Description	Part No.
	SENSOR CBA Consists on the following:	1VSA10080
	TRANSISTORS	
Q503	PHOTO TRANSISTOR PT204-6B-12 or	NPWZT2046B12
	PHOTO TRANSISTOR MID-32A22F	NPWZ1D32A22F
Q504	PHOTO TRANSISTOR PT204-6B-12 or	NPWZT2046B12
	PHOTO TRANSISTOR MID-32A22F	NPWZ1D32A22F

PSV CBA

Ref. No.	Description	Part No.
	PSV CBA Consists of the following	0VSA15245
	POWER SUPPLY CBA (PSV-A) JUNCTION CBA (PSV-B)	---------- ----------

POWER SUPPLY CBA

Ref. No.	Description	Part No.
	POWER SUPPLY CBA (PSV-A) Consists on the following:	----------
	CAPACITORS	
C012	ELECTROLYTIC CAP. 470µF/16V M or	CE1CMASDL471
	ELECTROLYTIC CAP. 470µF/16V M	CE1CMASTL471
C013	ELECTROLYTIC CAP. 10µF/50V M H7	CE1JMASSL100
C014	ELECTROLYTIC CAP. 470µF/16V M or	CE1CMASDL471
	ELECTROLYTIC CAP. 470µF/16V M	CE1CMASTL471
C015	ELECTROLYTIC CAP. 1000µF/16V M or	CE1CMZPDL102
	ELECTROLYTIC CAP. 1000µF/16V M	CE1CMZPTL102
C017	ELECTROLYTIC CAP. 4700µF/6.3V M	CE0KMZPTL472
C019	ELECTROLYTIC CAP. 1000µF/6.3V M or	CE0KMASDL102
	ELECTROLYTIC CAP. 1000µF/6.3V M	CE0KMASTL102
C021	ELECTROLYTIC CAP. 470µF/6.3V M or	CE0KMASDL471
	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASTL471
C023	CERAMIC CAP. B K 470pF/100V	CCD2AKS0B471
C024	ELECTROLYTIC CAP. 22µF/50V M or	CE1JMASDL220
	ELECTROLYTIC CAP. 22µF/50V M	CE1JMASTL220
C027	ELECTROLYTIC CAP. 3300µF/6.3V M	CE0KMZPTL332
C028	ELECTROLYTIC CAP. 1000µF/6.3V M or	CE0KMASDL102
	ELECTROLYTIC CAP. 1000µF/6.3V M	CE0KMASTL102
C029	ELECTROLYTIC CAP. 100µF/10V M H7	CE1AMAVSL101
C030	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C031	CERAMIC CAP.(AX) B K 0.033µF/50V	CA1J333TU011
C1001⚠	METALLIZED FILM CAP. 0.022µF/275V K or	CT2E223HJE13
⚠	METALLIZED FILM CAP. 0.022µF/275V K or	CT2E223HJE05
⚠	METALLIZED FILM CAP. 0.022µF/250V K or	CT2E223DC011
⚠	METALLIZED FILM CAP. 0.022µF/250V M	CT2E223MS037
C1003	CERAMIC CAP. B K 0.01µF/500V	CCD2JKP0B103
C1004	ELECTROLYTIC CAP. 220µF/200V M	CA2D221S6008
C1005	CERAMIC CAP. B K 120P/500V	CCD2JKS0B121
C1006⚠	SAFETY CAP. 3300pF/250V or	CCG2EMA0F332
⚠	SAFETY CAP. 3300pF/250V	CCD2EMA0E332
C1008	CERAMIC CAP. B K 220pF/500V	CCD2JKP0B221
C1013	CERAMIC CAP.(AX) X K 3300pF/16V	CCA1CKT0X332
C1029	CERAMIC CAP.(AX) X M 5600pF/16V	CDA1CMT0X562
C1032	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C1033	CERAMIC CAP. F Z 0.022µF/50V	CCD1JZS0F223
	DIDOES	
D012	SCHOTTKY BARRIER DIODE SB390	NDQZ000SB390
D013	RECTIFIER DIODE BA158 or	NDQZ000BA158
	RECTIFIER DIODE ERA22-10	QDPZ0ERA2210
D014	SCHOTTKY BARRIER DIODE SB190	NDWZ000SB190
D015	SCHOTTKY BARRIER DIODE SB340	NDQZ000SB340
D016	SCHOTTKY BARRIER DIODE SB340	NDQZ000SB340
D017	ZENER DIODE DZ-15BSCT265 or	NDTC00DZ15BS
	ZENER DIODE MTZJT-7715C	QDTC00MTZJ15
D018	RECTIFIER DIODE BA158 or	NDQZ000BA158
	RECTIFIER DIODE ERA22-10	QDPZ0ERA2210
D020	PCB JUMPER D0.6-P5.0	JW5.0T
D021	SCHOTTKY BARRIER DIODE SB340	NDQZ000SB340
D022	SCHOTTKY BARRIER DIODE SB140	NDQZ000SB140
D023	RECTIFIER DIODE FR101	NDWZ000FR101
D024	ZENER DIODE DZ-18BSBT265 or	NDTB00DZ18BS
	ZENER DIODE MTZJT-7718B	QDTB00MTZJ18
D025	ZENER DIODE DZ-6.8BSBT265 or	NDTB0DZ6R8BS
	ZENER DIODE MTZJT-776.8B	QDTB0MTZJ6R8
D1001	DIODE 1N5397-B	NDLZ001N5397
D1002	DIODE 1N5397-B	NDLZ001N5397
D1003	DIODE 1N5397-B	NDLZ001N5397
D1004	DIODE 1N5397-B	NDLZ001N5397
D1006	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148M	NDTZ01N4148M
D1007	CARBON RES. 1/4W J 68k Ω	RCX4JATZ0683
D1011	RECTIFIER DIODE BA158 or	NDQZ000BA158
	RECTIFIER DIODE ERA22-10	QDPZ0ERA2210
D1012	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148M	NDTZ01N4148M
D1018	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148M	NDTZ01N4148M
D1022	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148M	NDTZ01N4148M
D1024	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133

Ref. No.	Description	Part No.
	SWITCHING DIODE 1N4148M	NDTZ01N4148M
D1025	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148M	NDTZ01N4148M
	ICS	
IC010⚠	PHOTOCOUPLER LTV-817C-F or	NPEC0LTV817F
⚠	PHOTOCOUPLER LTV-817B-F or	NPEB0LTV817F
⚠	PHOTOCOUPLER EL817A or	NPEA000EL817
⚠	PHOTOCOUPLER EL817B or	NPEB000EL817
⚠	PHOTOCOUPLER EL817C or	NPEC000EL817
⚠	PHOTOCOUPLER PS2561A-1(W) or	QPEWPS2561A1
⚠	PHOTOCOUPLER PS2561A-1(Q)	QPEQPS2561A1
	COILS	
L010	INDUCTOR(18UH) TWKB-180K	LLC180KKV006
L012	INDUCTOR(15UH) TWKB-150K	LLC150KKV006
L013	CHOKE COIL 47µH-K or	LLBD00PKV007
	CHOKE COIL 47µH-K or	LLBD00PKV005
	CHOKE COIL 47µH-K	LLBD00PKT001
L1001⚠	LINE FILTER 27MH TLF14CB2730R4 or	LLBG00ZTU034
⚠	LINE FILTER 27MH CSA-LF199A	LLBG00ZSA008
	TRANSISTORS	
Q031	TRANSISTOR KTA1267(GR) or	NQS10KTA1267
	TRANSISTOR KTA1267(Y) or	NQSY0KTA1267
	TRANSISTOR 2SA1175(J) or	QQSJ02SA1175
	TRANSISTOR 2SA1175(H) or	QQSH02SA1175
	TRANSISTOR 2SA1175(F)	QQSF02SA1175
Q1001⚠	MOS FET 2SK3563	QFWZ02SK3563
Q1003	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1008	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC1815-Y(TPE2)	QQSY02SC1815
	RESISTORS	
R001⚠	GLASS GLAZE RES. 1/2W J 3.3M Ω or	RXX2JZLZ0335
⚠	SOLID RES.(BULK STRATING)1/2W 3.3M Ω or	RSX2335KE008
⚠	CARBON RES. 1/2W J 3.3M Ω	RCX2335DP001
R015	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R016	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R017	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R018	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R019	CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJR5Z0182
R020	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R021	CHIP RES.(1608) 1/10W F 2.2k Ω	RRXAFR5Z2201
R022	CHIP RES. 1/16W J 5.6K	RRXAJR5Z5601
R023	CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R024	CHIP RES.(1608) 1/10W J 68k Ω	RRXAJR5Z0683
R1004	METAL OXIDE FILM RES. 2W J 82k Ω	RN02823ZU001
R1005	CARBON RES. 1/4W J 1M Ω	RCX4JATZ0105
R1006	CARBON RES. 1/4W J 1M Ω	RCX4JATZ0105
R1008	CARBON RES. 1/6W G 680 Ω or	RCX6GATZ0681
	CARBON RES. 1/4W G 680 Ω	RCX4GATZ0681
R1010	CARBON RES. 1/6W J 22k Ω or	RCX6JATZ0223
	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R1011	METAL OXIDE FILM RES. 2W J 0.68 Ω or	RN02R68KE009
	METAL OXIDE FILM RES. 2W J 0.68 Ω	RN02R68ZU001
R1029	CARBON RES. 1/6W J 150k Ω or	RCX6JATZ0154
	CARBON RES. 1/4W J 150k Ω	RCX4JATZ0154
R1032	CARBON RES. 1/6W J 2.2k Ω or	RCX6JATZ0222
	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222

Ref. No.	Description	Part No.
R1034	CARBON RES. 1/4W J 680k Ω	RCX4JATZ0684
R1035	CARBON RES. 1/6W J 1k Ω or	RCX6JATZ0102
	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R1036	CARBON RES. 1/6W J 100k Ω or	RCX6JATZ0104
	CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R1037	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R1038	CARBON RES. 1/6W J 100k Ω or	RCX6JATZ0104
	CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R1039	CARBON RES. 1/6W J 470k Ω or	RCX6JATZ0474
	CARBON RES. 1/4W J 470k Ω	RCX4JATZ0474
R1043	METAL RESISTER. 2W J 2.7 Ω	RN022R7ZU001
	MISCELLANEOUS	
2B18	HEATSINK V2600PZ	0VM409007A
2L019	SCREW, S-TIGHT M3X8 BIND + CHROME	GBMS3080
AC1001⚠	AC CORD PB8K9F9110A-05A or	WAC0172LW012
⚠	AC CORD PB8B2F9110A-05A	WAC0172LW013
F1001⚠	FUSE 1A/250V or	PAGG20CAG102
⚠	FUSE SIC 1A 250V U/C T	PAGG20CW3102
FH1001	FUSE HOLDER MSF-015	XH01Z00LY001
FH1002	FUSE HOLDER MSF-015	XH01Z00LY001
T001⚠	SWITCHING TRANSFOMER 4706-S07	LTT00CPKT142

JUNCTION CBA

Ref. No.	Description	Part No.
	JUNCTION CBA (PSV-B) Consists on the following:	---------
	CONNECTOR	
CN1609	CONNECTOR, 18P TUC-P18X-B1	JCTUS18TG001
	DIODE	
D2013	RECTIFIER DIODE RL201	NDQZ000RL201
	MISCELLANEOUS	
W003	PARALLEL WIRE, 9P AWG26#2651/P2.0/70	WX1E9400-002
W004	PARALLEL WIRE, 9P AWG26#2651/P2.0/70	WX1E9400-002

EWR20V4
E9400UD
2004-04-19